V10301

Operating Instructions

ENGLISH

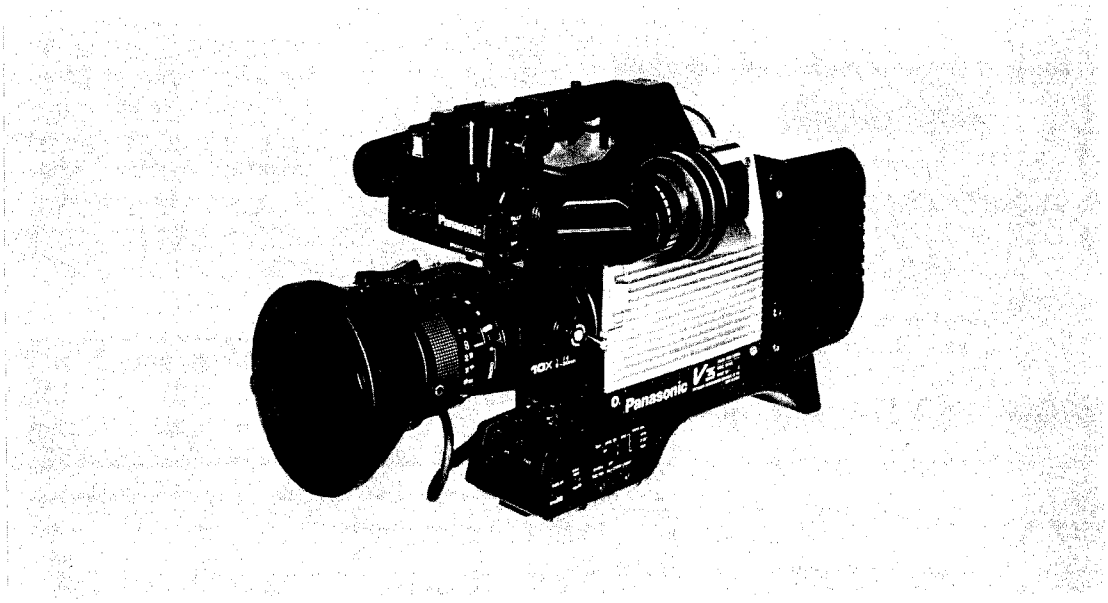
DEUTSCH

FRANÇAIS

ESPAÑOL

PAL Colour Video Camera

WV-V3E Series



Panasonic

Before attempting to connect or operate this product, please read these instructions completely.

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ENGLISH VERSION

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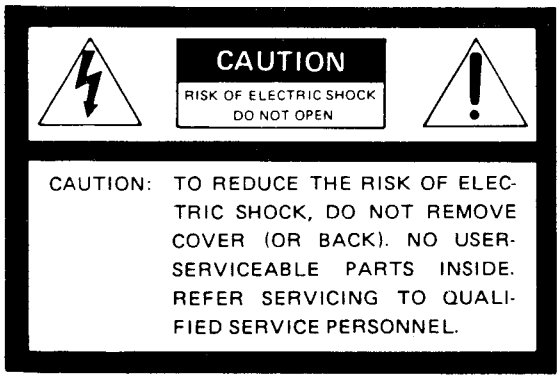
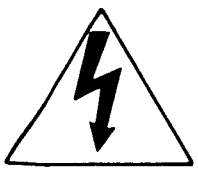

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

The serial number of this product may be found on the rear panel of the unit.
You should note the serial number of this unit in the space provided and retain this instructions as a permanent record of your purchase to aid identification in the event of theft.

Model No. WV-V3E

Serial No. _____

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

PREFACE

Panasonic introduces the WV-V3E series colour camera. Incorporating Panasonic's most recent video technology, this camera offers you advanced performance at a modest price without any compromise in quality and features.

It features an easy to operate three-tube construction with 1/2" Newvicon® tubes that provide high resolution (570 lines) with a low risk of burn-in. Its lightweight chassis contains all the automatic functions you need and the WV-V3E will also perform well in low lighting. "ATW" continuous auto white balance system has been incorporated into the WV-V3E camera. This system has a colour temperature sensor which accurately traces the light source colour temperature. A conventional auto-white balance function is also included with two memory settings (AWC1 and AWC2) that allows you to preset the balance for two different lighting conditions. An auto-centering circuit gives you precise registration, even while the camera is hand-held. One-touch auto-centering, auto-white, and auto-black function enable quick and accurate operation at the push of a button.

You can achieve virtually optimum results with the WV-V3E's electronic viewfinder. The viewfinder confirms operating conditions, and provides you with necessary warnings.

The WV-V3E also offers you operational convenience and system flexibility. Its low profile design permits unobscured vision for cameramen, and its compact size and lightweight construction provides for a minimum of operator discomfort.

FEATURES

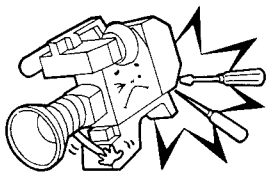
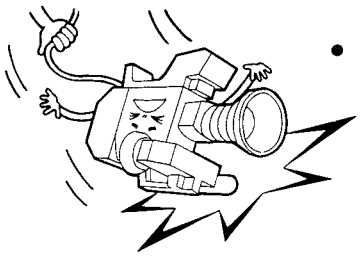
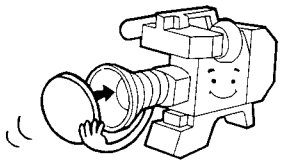
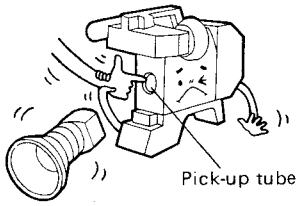
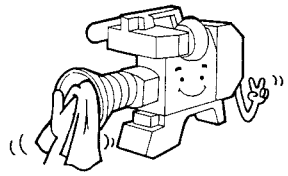
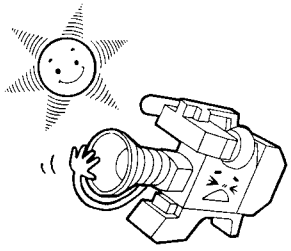
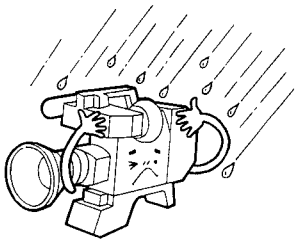
1. Self-contained, well-balanced, compact ENG/EFP portable colour camera.
2. High performance, Middle index prism optical system with three 1/2" Newvicon® tubes.
3. PAL output for use with most VTR.
4. Horizontal resolution of 570 lines.
5. Signal-to-noise ratio of –52 dB.
6. 1.5" electronic viewfinder (1-3/8" actual image size, measured diagonally) tilts and adjusts for convenient viewing.
7. Side-mounted unidirectional electret condenser microphone.
8. Automatic tracing white-balance accurately traces the light source colour temperature.
9. Conventional auto-white balance setting with two memories.
10. Automatic black setting with memory.
11. Automatic beam (feedback beam) control.
12. Automatic centering.
13. +6dB and +12dB high gain selection switch.
14. Minimum illumination of 3 footcandles (30 lux) at F1.4 with +12dB gain.
15. Internal sync generator and gen-lock operation with optional RCU/gen-lock adaptor.
16. Switchable audio output level (-20 dB or -60dB).
17. Vertical enhancer of 2H.
18. EBU colour bar generation.
19. Fade in/out effect (Audio and Video).
20. Fade colour selection switch selects one of three colour fade-in/out effects : WHITE, BLACK and EXT.
21. Negative/positive picture selection.
22. Rec Review for quick review of recording.
23. Audio monitor output (for earphone).
24. Positive/negative VTR trigger polarity switch.
25. Colour temperature conversion filters : 3200°K, 5600°K, 5600°K with 1/8ND and closed.
26. Attractive titles and dates by using optional full-keyboard titler WV-KB12E.
27. Operates from five different power sources : body-integrated NiCad battery pack, body-integrated AC adaptor, optional RCU, optional portable VTR (operated by AC adaptor) or external DC.
28. Die-cast chassis for rigid alignment of the optical system and metal camera exterior for durability and RF rejection.
29. Servo control power zoom lens with automatic iris control.
30. Standby switch for reduced power consumption during idle modes.
31. Full studio adaptability with 5" studio viewfinder (4.5" actual image size, measured diagonally) and remote control unit (RCU).

®: Registered Trademark

CAUTION : THIS CAMERA MAY NOT FUNCTION PROPERLY IF IT IS CONNECTED TO THE VTR OF OTHER MANUFACTURER.

PRECAUTIONS

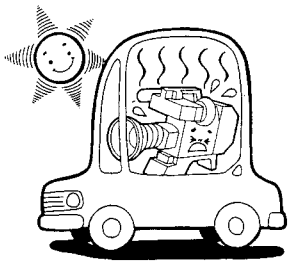
The WV-V3E is a sensitive, high quality instrument and should be regarded as such. Because it is an electrical device, the danger of electric shock exists if it is used carelessly.

DON'TS		DO'S
x Do not attempt to disassemble the camera or RCU. In order to prevent electric shock, do not remove screws or cover. There are no user-serviceable parts inside.		• Do refer any servicing to qualified service personnel.
x Do not abuse the camera. Avoid striking, shaking etc. The camera contains a sensitive pick-up tube which could be damaged by improper handling or storage.		• Do handle the camera with care.
x Do not let the lens remain uncapped when the camera is not in use. If the lens is not installed, do not leave the lens mount hole uncovered. Do not leave the lens cap on when the power is turned on. This can reduce the life of the pick-up tube.		• Do protect the precision lens by placing the lens cap over the lens when the camera is not in use. If the lens is not installed, protect the surface of the pick-up tube by placing the body cap into the lens mount hole. Always remove lens cap before turning the power on.
x Do not touch the surface of the lens or pick-up tube with your fingers.		• Do use a mild blower or lens cleaning tissue designed for coated lens, to clean the surface of the lens or pick-up tube in the event that they become dirty.
x Do not use strong or abrasive detergents when cleaning the camera body.		• Do use a dry cloth to clean the camera if it is dirty. In case the dirt is hard to remove, use mild detergent and wipe gently.
x Do not aim the camera toward the sun, whether it is turned on or not. This action could permanently damage the pick-up tube.		• Do use caution when operating the camera in the vicinity of spot lights or other bright lights, and light reflecting objects.
x Do not expose the camera or RCU to rain or moisture, or try to operate it in wet areas. Do not operate the camera or RCU if it becomes wet.		• Do take immediate action if ever the camera or RCU do become wet. Turn power off and have the unit checked by an authorized serviceman.

x Do not operate the camera and RCU in the field during an electrical (lightning) storm.

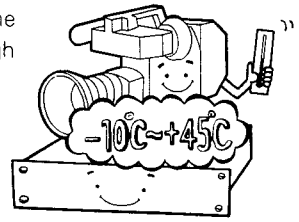
- Do follow the normal safety precautions to avoid personal injury.

x Do not leave the camera or RCU in a closed car or trunk during summer. Temperatures can reach or exceed the limits for devices within the camera.



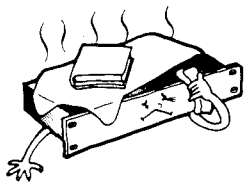
- Be aware of the temperature in the car or remove the equipment to a more moderate environment.

x Do not use the camera in an extreme environment where high temperature or high humidity exist.



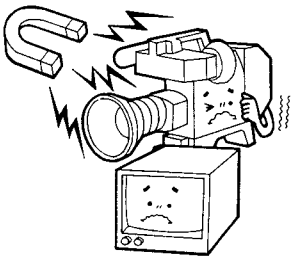
- Use the camera in environments where temperatures are within $-10°C \sim +45°C$, and humidity is within 30% ~ 90%.

x Do not leave the camera and RCU turned on when not in use.
Do not turn the power on and off repeatedly without use. Do not block the ventilation slots.



- Always turn the power off when the camera is not going to be used, this will extend the life of the pick-up tube. Operate the camera and RCU only where there is adequate ventilation.

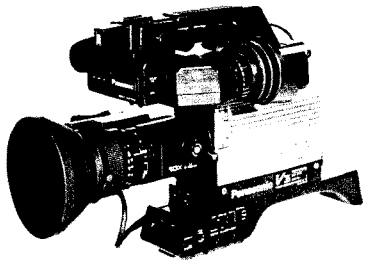
x Do not use near sources of strong magentic fields.
Fluorescent lights, motors or other sources of magnetic fields may distort or otherwise adversely affect images.



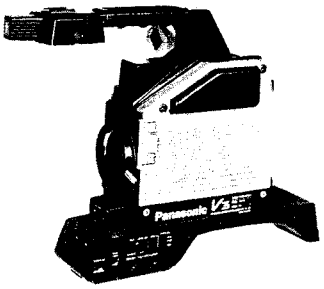
- Do use the camera far from the sources of strong magnetic fields.

COMPOSITIONS FOR WV-V3E SERIES

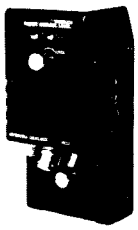
■ ENG Colour Camera
(WV-V3E)



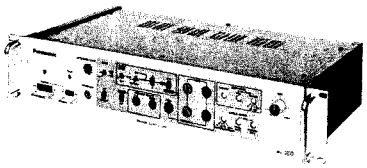
■ Camera Head
(WV-V3HE)



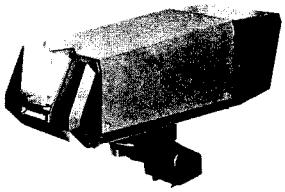
■ RCU/Gen-lock Adaptor
(WV-AD33E)



■ Remote Control Unit (RCU)
(WV-RC33)

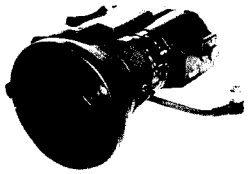


■ 5" Electronic Viewfinder
(WV-VF65E)

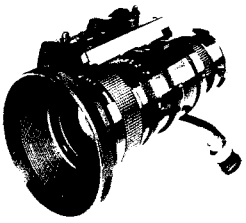


■ 1.5" Electronic Viewfinder
(WV-VF34E)

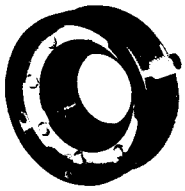
■ Servo Control Zoom Lens
(WV-LZ33/10E)



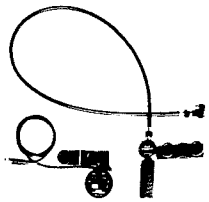
(WV-LZ32/10)



■ Lens Mount Adaptor
(WV-AD34)

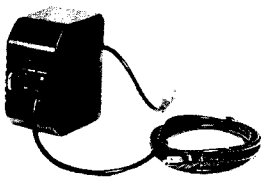


■ Lens Control Kit
(WV-LK32)

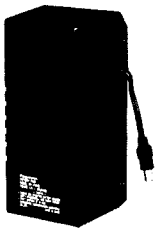


■ Unidirectional Electret Condenser Microphone
(WV-MC34E)

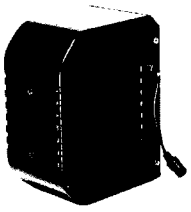
■ AC Adaptor/ Charger
(WV-PS31)



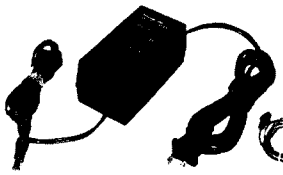
■ Battery Pack
(WV-PS60E)



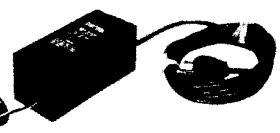
(WV-PS33E)



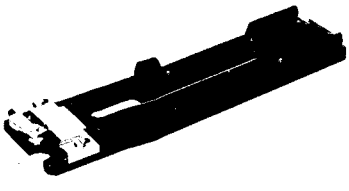
■ Battery Charger
(DE-1232E)



(WV-BC30)

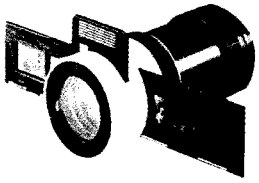


■ Tripod Mounting Adaptor
(WV-Q36E)

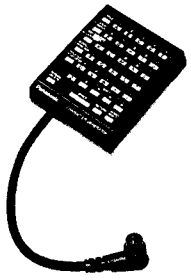


■ Chest Pad
(WV-Q30E)

■ Film Slide Adaptor
(WV-AD15BE)



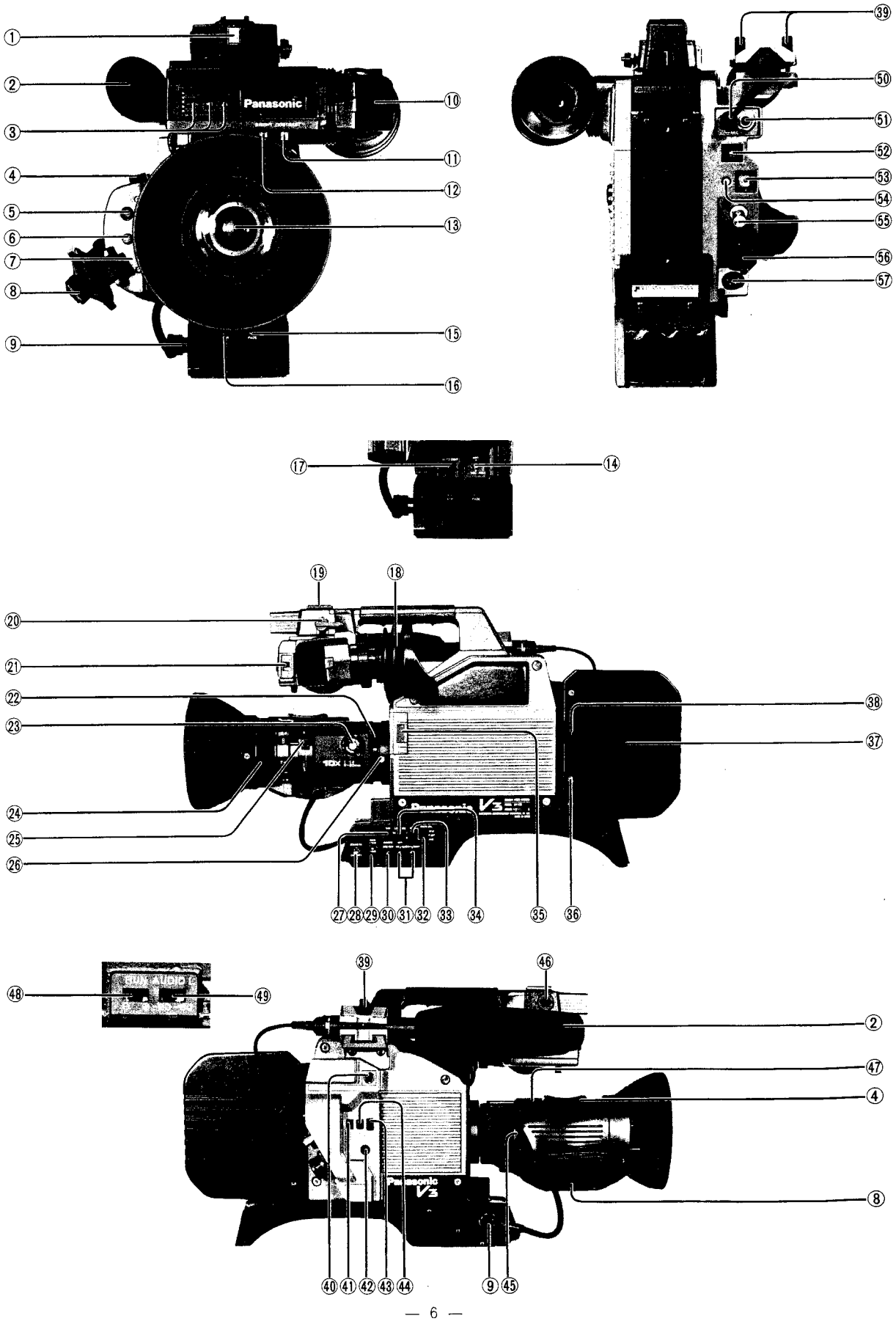
■ Character Generator
(WV-KB12E)



■ Carrying Case
(WV-CC35E)

MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS

ENG Colour Camera System WV-V3E



ENG Colour Camera System WV-V3E

1 ATW (Automatic Tracing White-Balance) Sensor
This sensor detects the characteristic/colour temperature of the light source and controls the gain of the red and blue signal individually and automatically for white balance setting when the White Balance Selection Switch (32) is set to the ATW position.
Note : Do not block the sensor during the automatic tracing white balance mode.

2 Microphone
This unidirectional monaural electret condenser microphone features extra sensitivity to sounds coming from a single direction. The output level of microphone is approximately -70 dB. It is connected to the Internal Microphone Connector (50) which supplies the power to the microphone.

3 Tally Light (red)
This tally light is illuminated when the unit is in full system operation with the remote control unit and special effects generator or is used with a Panasonic portable VTR.
The tally light informs the camera operator and others concerned that the camera is actually shooting the scene.

4 Power Servo Zoom Control (W/T)
The 10:1 power zoom lens can be controlled by pressing this control to zoom in/out for tele/wide pictures.

5 Auto Iris Level Fine Control (FINE)
Auto iris level can be fine-controlled by adjusting this control when the Iris Selection/Manual Control Knob (23) on the lens is pushed to the AUTO position.

6 Auto Iris Level Preset Control
The auto iris level can be preset/adjusted after removing the cap.

7 Power Servo Zoom Unit
This is a control unit for the power servo zoom of the lens.

8 Hand Strap
This hand strap is for holding the camera securely. The length of the strap is adjustable.

9 Lens Connector (LENS)
This connects the auto iris power servo control zoom lens which automatically adjusts the incoming light intensity by changing the lens iris.

10 Electronic Viewfinder (Tiltable)
This small 1.5" (1-3/8" actual image size) TV monitor shows exactly what the lens sees. The viewfinder is tiltable and can be adjusted up or down (approximately 90°) from horizontal. It can also be slid approximately 1-9/16" (40mm) laterally and 13/16" (20mm) back and forth.

11 Contrast Control (CONTRAST)
Turn this control clockwise to increase the picture contrast in the viewfinder.

12 Brightness Control (BRIGHT)
Turn this control clockwise to increase the picture brightness in the viewfinder.

13 Auto Iris Power Servo Control Zoom Lens
This is an 8 - 80mm lens for the 1/2" tube with automatic & manual iris control and power servo control zoom. It has a bayonet mount and F1.4 maximum aperture. The picture size can be magnified 10 times with use of the zoom feature. Just rotate the zoom/macro ring for close-up or wide angle. Enlarged close-ups with macro function can be made at a distance of up to 5cm (2 inch). When an auto iris power servo control zoom lens for 2/3" pick-up tube is used, the lens mount adaptor should be replaced by referring to page 24.

14 Auto White/Auto Black Set Switch (AWC/HOLD/ABC)
This switch sets the white balance and black balance automatically as follows;

AWC : For setting the white balance when the White Balance Selection Switch (32) is set to the AWC position. White balance setting will be necessary when WHITE, AWC 1 or AWC 2 blinks in the viewfinder. White balance for two different light sources such as indoor and outdoor can be set by setting the AWC Selection Switch (33) to AWC 1 or 2.

HOLD : This holds the white balance and black balance set at the AWC and ABC position for a long period of time.

ABC : For setting the black balance. Black balance setting is necessary when BLACK blinks in the viewfinder.

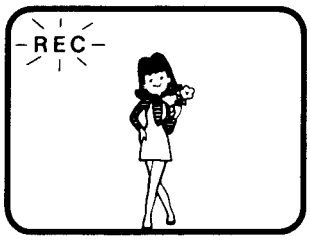
Note : Since the black balance at the 0 dB and +12 dB setting of the high gain selection switch is set alternately by selecting the 0 dB and +12 dB position automatically, the picture on the viewfinder and on the video monitor flashes while the black balance is being set.

15 Fade Button (FADE)

This button can be used to fade in or fade out recordings. When the button is pressed, the letter F is displayed in the viewfinder. The colour for the fade-in/out effect is selected by the Fade Colour Selection Switch (43). Refer to page 46 for details.

16 VTR Start/Stop Button (VTR) (Parallel Operation)

This lock-release type switch is used to change the recorder mode from pause (Record/Pause) to record and functions as a VTR Start/Stop Button (45) on the lens. Push the button once and the recorder will start to record. REC blinks in the viewfinder and the Power Indicator (54) blinks. The Tally Light (3) on the viewfinder also lights during the recording.



Push the button again to place the recorder in pause (Record/Pause) mode. The blinking REC disappears, the Power Indicator will stop blinking and the Tally Light will go off.

Note : This button/switch is only operative when the VTR Start/Stop Button (45) on the lens is released (pause mode).

17 Auto Centering Set Switch (AUTO CENT)

This sets the horizontal and vertical centering of the red and blue picture to coincide with the green picture. Centering setting is necessary when CENT blinks in the viewfinder.

18 Eye Cap

This blocks out extraneous light. Rotate the eye cap for the optimum diopter setting.

19 Accessory Shoe

Used for mounting the Character Generator WV-KB12E or a light source.

20 Viewfinder Lock Lever

The viewfinder is locked and released by this lever.

21 Tally ON/OFF Switch (TALLY ON/OFF)

This switch turns ON/OFF the Tally Light (3) located on the front of the viewfinder.

22 Flangeback Adjusting Ring/Knob

Flangeback of the lens can be adjusted by rotating this ring/knob after loosening the knob.

23 Iris Selection/Manual Control Knob

Press this knob and the lens iris automatically adjusts to the light intensity. Pull and turn the knob to manually adjust the lens iris.

Note : This knob should be pushed to the AUTO mode when the camera is used with the remote control unit (RCU).

24 Focus Ring

Turning the ring located on the lens adjusts the focus. Focusing the lens of the camera alters the viewfinder picture. Bring the object into focus by adjusting the Focus Ring and observing the picture on the viewfinder.

25 Zoom Ring/Lever and Macro Knob

The picture size can be manually magnified 10 times with the use of this zoom ring/lever. Just rotate the zoom ring/lever for close-up (Tele) or wide angle (Wide) picture.

For close-up shooting, turn the zoom ring/lever to the macro range while pushing the macro knob. The camera can shoot objects as close as 5 cm (2").

CAUTION : (1) Do not zoom the lens in macro mode. The picture will go out of focus, because in macro mode the zoom ring/lever is used as a focus adjuster.

(2) Macro mode is automatically released when the lens is zoomed.

26 Lens Hold Ring/Knob

Turn this ring/knob clockwise to secure the lens tightly.

27 Colour Bar/Camera Selection Switch (BAR/CAMERA)

This switch selects the video output signal;

BAR : EBU colour bar is provided from the Video Output Connector (55) and 14-pin VTR connector (56).

CAMERA : The actual picture viewed by the lens is displayed.

Note : This switch is inoperable when the RCU is used.

28 Standby/Operate Selection Switch (STANDBY/OPERATE)

This switch selects the camera operation mode as follows;

STANDBY : The camera circuit is turned OFF to conserve the battery, except for the heating element of the pick-up tube and viewfinder CRT. The power indicator lights green.

OPERATE : The unit is in operating condition after necessary adjustments. The power indicator lights red.

Note : This switch should be set to the OPERATE position when the camera is used with the remote control unit (RCU).

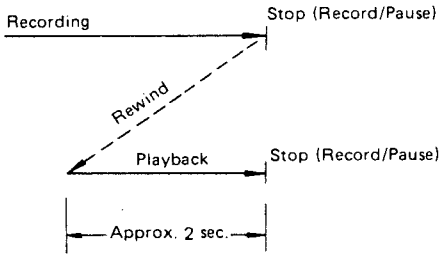
29 High Gain Selection Switch (GAIN +6dB/0/+12dB)

Normally set this switch to 0 dB position. Positions +6 dB and +12 dB increase the video output amplitude for dark scenes and are equivalent to opening the lens iris one or two F stops.

30 Rec Review Button (REC REV)

When this camera is operated with a Panasonic specified portable VTR such as the NV-180, this function operates and this button is only activated in the VTR's pause (Record/Pause) mode.

When this button is pressed after recording and the VTR is in pause mode, the VTR automatically rewinds the tape for quick review and plays back the tape for approximately 2 seconds to allow a visual check of the recording.



31 CHECK Button (CHECK 1-2, RESET)

The setting condition of the camera can be displayed in the viewfinder by CHECK 1 and 2 displays when the CHECK 1-2 button is pressed.

CHECK 1

CENT	OK
BLACK	OK
AWC 1	3200K
GAIN	0 DB

CHECK 2

LIGHT	OK
SYSTEM	10P
RUN	PLUS
AUDIO	−60DB

The CHECK display disappear from the viewfinder when the CHECK RESET button is pressed.

Note : The CHECK display disappear from the viewfinder when the automatic white balance, black balance or centering setting are activated.

32 White Balance Selection Switch (WHITE BAL, ATW/P SET/AWC)

This switch selects white balance mode as follows;

ATW : The white balance is automatically set by detecting the characteristic/colour temperature of light source with the ATW sensor (1) and controls the gain of red and blue signal even if the characteristic/colour temperature changes.

Note : (1) The Filter wheel (35) must be set to position 1 in this operation.

(2) If the camera is used with the lens other than WV-LZ33/10E outdoor in the ATW position, the lens iris may hunt continuously. In this case, the ND filter which reduces the light intensity more than 1/8 should be mounted on the lens.

P SET : Proper white balance is reproduced when the camera is aimed at an object illuminated by 3200°K colour temperature light and the Filter Wheel (35) is set to position 1.

AWC : The white balance can be set automatically by the Auto White/Auto Black Set Switch (14). The white balance for two different light sources such as indoor and outdoor can be set by setting the AWC Selection Switch (33) to AWC 1 or 2.

Note :
1. It is recommended to use the ATW position if quick setting up is required or the characteristic/colour temperature of light would vary during shooting.
2. It is recommended to use the AWC position if the characteristic/colour temperature of scene does not vary.
3. This switch is inoperable when the RCU is used.

33 AWC Selection Switch (AWC 1/2)

The white balance for two different light sources such as indoor and outdoor can be set by selecting this switch to AWC 1 or 2 when the White Balance Selection Switch (32) is in the AWC position.

34 Level Indicator ON/OFF Switch (LEVEL IND ON/OFF)

When this switch is set to the ON position, pictures which exceed the specified level (0.7Vp-p) produce a zebrz pattern in the viewfinder.

When the background is bright and the object appears too dark in automatic iris control mode, adjust the lens iris in the manual iris control mode so that the object in the viewfinder is almost developing a zebra pattern. In this case the background may become overexposed.

Set this switch to the OFF position in the automatic iris control mode.

35 Filter Wheel

To set the filter wheel, flip-open the cover.

The filter wheel is a four-position wheel which has two built-in colour temperature conversion filters and one ND filter.

	CHECK display
(1) 3200°K - indoor light	3200K
(2) 5600°K	
+12.5% ND - daylight (sunny)	56 ND
(3) 5600°K - daylight (cloudy/rainy)	5600K
(4) Close	CLOSE

Select the position according to the light source (see page 40). The position of filter wheel is displayed in the viewfinder in CHECK operation.

Note : The filter wheel must be set to the position 1 in the automatic tracing white-balance (ATW) operation.

36 Charge Connector for Battery Pack WV-PS33E

The charging cord from the battery charger is connected to this connector.

37 Battery Pack WV-PS33E

The battery pack WV-PS33E is mounted on the camera and provides power for approximately 2 hours.

38 Battery Pack Release Button

When removing the battery pack, lift it up while pressing this button.

39 Microphone Holding Knob

To secure the microphone, turn this knob clockwise.

40 Audio Monitoring Jack (M3) (AUDIO MONITOR)

When the earphone is connected, the sound of the Internal Microphone Connector (50) or the External Microphone Connector (51) can be monitored.

41 VTR Selection Switch (VTR 10P/14P)

This switch selects the type of VTR connected to the 14-Pin VTR Connector (56).

10P : Panasonic portable VTR with 10-pin camera connector such as NV-180 is connected to the VTR connector using the VTR cable WV-CA14/10.

14P : Portable VTR with 14-pin camera connector may be connected to the VTR connector using the VTR cable WV-CA14/14.

Note : (1) Set this switch correctly before turning ON the Power Switch (53).
(2) If this switch is set incorrectly, the camera may not function properly.

42 Total Pedestal Control (TOTAL PED)

This control can adjust the pedestal level of video signal (luminance) for matching the pedestal level of more than two cameras in the system. Use a waveform monitor or oscilloscope for precise adjustment.

Note : It is operable even when the RCU is used.

43 Fade Colour Selection Switch (FADE WHITE/BLACK/EXT)

This switch selects the colour for fade-in/out effect as follows;

WHITE : The picture fades in(out) from(to) white.

BLACK : The picture fades in(out) from(to) black.

EXT : The picture fades in(out) from(to) one of seven colours selected by the character generator WV-KB12E. Selectable colours are white, cyan, yellow, magenta, blue, red or green.

44 Negative/Positive Selection Switch (NEGA/POSI)

When this switch is set to the NEGA position, the normal (positive) picture is converted into a negative picture.

45 VTR Start/Stop Button (VTR) (Parallel Operation)

This is a lock-release type switch which is used to change the recorder from pause (Record/Pause) to record as well as a VTR Start/Stop Button (16) on the camera. Push the button once and the recorder will start to record as shown by REC blinking in the viewfinder and the blinking power indicator (54). The Tally Light (3) on the viewfinder also lights during the recording.

Push the button again and the recorder enters pause (Record/Pause) mode, and REC will disappear, the Power Indicator will stop blinking and the Tally Light will go off.

Note : This button is only operative when the VTR Start/Stop Button (16) on the camera is released (pause mode).

46 Title Connector (TITLE)
The character generator WV-KB12E is connected to this connector.

47 Return Video Button (RET)
When portable VTR with 14-pin camera input connector is used, the recording and playback picture may be seen by pressing this button.
When an auxiliary signal such as lineview signal from a special effects generator is supplied to the auxiliary connector of the remote control unit (RCU) during system operation, the lineview signal is displayed on the viewfinder while this button is being pressed.

48 VTR Compatibility Switch (RUN ⊕/⊖)
The logic level of the camera trigger for different VTRs may be incompatible and reversed, so that the VTR pauses when it should run and vice versa. In this case, operate this switch to reverse the trigger polarity. It is factory-set to the ⊕ position.

49 Audio Level Selection Switch (AUDIO L –20dB/–60dB)
Two audio output levels for the VTR can be selected : -20dB or -60dB. It is factory-set to the -20dB position.

50 Internal Microphone Connector (M3) (MIC INT)
The internal microphone (2) mounted on the camera is connected to this connector. The connector supplies power to the microphone.

51 External Microphone Connector (M6) (MIC EXT)
An external microphone with output level of approximately -70dB can be connected to this M6 connector.
When an external microphone is connected, the internal microphone is mechanically disconnected.

52 Battery Connector (BATTERY)
This battery connector is for connecting the battery pack.

53 Power Switch (POWER BATT, OFF, VTR/RCU)
This switch turns ON the power of the camera as follows;

EXT/BATT/AC ADP : This position is used for external DC, battery pack or AC adaptor.

OFF : The power is OFF.

VTR/RCU : This switch is used for selecting the power source from VTR (operated by AC adaptor) or the remote control unit (RCU) via the RCU/gen-lock adaptor.

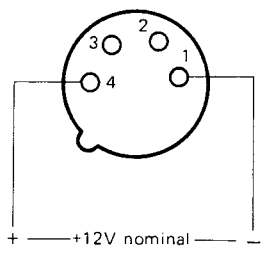
54 Power Indicator (POWER)
This indicator lights red when the camera is in operating condition. If the VTR Start/Stop Button is pressed in the operating condition, this indicator blinks to indicate the recording mode. When the camera is in the standby mode, the indicator lights green.

55 Video Output Connector (BNC) (VIDEO OUT)
A composite video signal is provided at this connector.

56 14-Pin VTR Connector (VTR)
When used in conjunction with a Panasonic portable VTR, the following VTR cable is connected between the camera and VTR.
The VTR Selection Switch (41) should be set according to the VTR connected to this connector.

Portable VTR with 10-pin camera connector, such as Panasonic NV-180 :
VTR cable WV-CA14/10
Portable VTR with 14-pin camera connector :
VTR cable WV-CA14/14

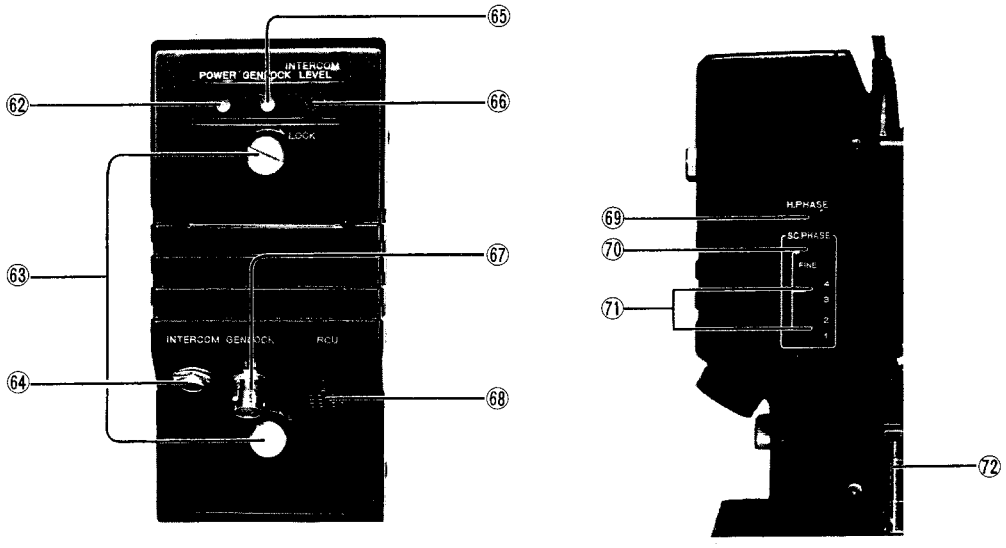
57 4-Pin External DC Input Connector (EXT DC)
This connector is used for connecting a cable from an external DC nominal 12V 1.1A power source (a belt type battery or a car battery for example). This connector is also used for connecting a cable from an AC adaptor.



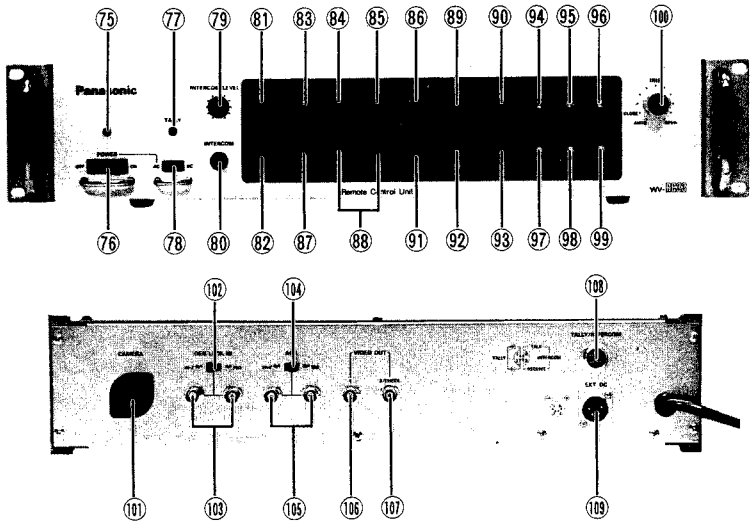
MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS

Studio Camera System/Main Optional Accessories

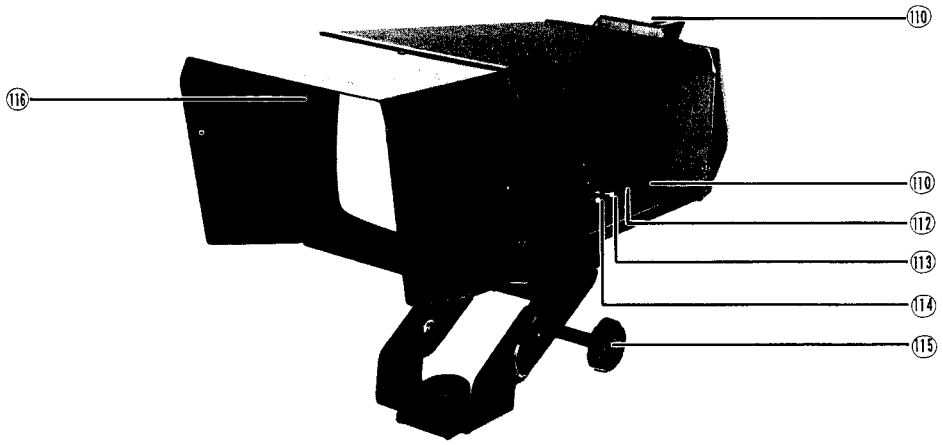
- RCU/Gen-lock Adaptor WV-AD33E



- Remote Control Unit (RCU) WV-RC33



- 5" Monochrome Electronic Viewfinder WV-VF65E



RCU/Gen-lock Adaptor WV-AD33E

62 Power Indicator (Red)
This indicator lights when the RCU/gen-lock adaptor is in the operating condition.

63 Lock Screw
Turn these lock screws clockwise to attach the RCU adaptor to the camera.

64 Intercom Jack (INTERCOM)
This intercom jack is used for communication between camera operator and RCU operator in system operation with special effects generator.

65 Gen-lock Indicator (GEN-LOCK)
This indicator lights ON when the gen-lock signal (composite or black burst signal) for external synchronization is supplied to the Gen-lock Input Connector (67) or to the 14-Pin RCU Connector (68) via the RCU.

Gen-Lock :
Cameras for occasional use in studio operations must be capable of being synchronized with other cameras or a sync or video reference source. Where the outputs of two or more cameras are combined at a special effects generator for example, each camera in the system must be synchronized.
Synchronization was formerly achieved by driving all cameras from a master sync generator. Today, it is more common for a video signal source such as a camera, to be designated the master for synchronization purposes.

This master unit operates from its own internal sync generator and the cameras are supplied with composite video or black burst from the master.

The internal synchronizing circuit in each camera locks their sync and subcarrier to that of the master. This system, called gen-lock, modifies the camera's sync generator operation to keep it in lock.

66 Intercom Level Control (INTERCOM LEVEL)
Turn this control to obtain optimum sound level for the headset connecting to the Intercom Jack (64).

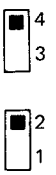
67 Gen-lock Input Connector (GEN-LOCK)
The colour video signal of camera is automatically synchronized to the gen-lock signal (composite or black burst) which is introduced in this connector from the system reference such as a special effects generator.
Caution : If the gen-lock signal contains much jitter (such as a VTR playback signal), the camera may not be synchronized properly.

68 14-Pin RCU Connector (RCU)
This connector is used for connecting the 14-pin studio cable from the remote control unit (RCU) for system operation.

69 Horizontal Phase Control (H PHASE)
The horizontal phase of the camera signal is adjusted to match the horizontal phase of the signal at the Gen-lock Input Connector (67).
This control should be adjusted when the camera is used in a system using a special effects generator. See page 30.

70 Subcarrier Phase Fine Control (FINE)
This control allows fine adjustment of the subcarrier phase set by the Subcarrier Phase Coarse Switch (71).
It allows continuous control of up to plus 90° subcarrier phase to match the phase of subcarrier signal at the Gen-lock Input Connector (67).
This control should be adjusted together with the Subcarrier Phase Coarse Switch (71) when the camera is used in the system using the special effects generator. See page 30.

71 Subcarrier Phase Coarse Switch (SC PHASE)
The subcarrier phase of the camera signal is adjusted from 0° to 360° in 90° steps with these switches as shown below for matching the phase of subcarrier signal at the Gen-lock Input Connector (67).
The switches should be set when the camera is used in the system using the special effects generator. See page 30.

SC Phase	0°	90°	180°	270°
Position of Switches				

72 32-Pin Junction Connector
This connector is used to connect the RCU/gen-lock adaptor to the camera.

Remote Control Unit (RCU) WV-RC33

75 Power Indicator
This indicator lights up whenever the unit is operated.

76 Power Switch (POWER ON/OFF)
This switch activates power for the RCU.

77 Tally Indicator (TALLY)
When RCU is used in conjunction with a special effects generator, the tally indicators on the viewfinder and RCU inform to the camera operator, RCU operator and others concerned that the camera system is actually recording the scene.

78 AC/DC Selection Switch (AC/DC)
This switch selects the AC or DC power source for the RCU.

79 Intercom Level Control (INTERCOM LEVEL)
Turn this control to obtain optimum sound level for the headset connected to the Intercom Jack (80).

80 Intercom Jack (INTERCOM)
This is used for communication between camera operator and RCU operator in system operation with special effects generator.

81 High Gain Selection Switch (+6dB/0dB/+12dB)
Normally set this switch to 0dB position. Positions +6dB and +12dB increase the video output amplitude for dark scenes and are equivalent to opening the lens iris one or two F stops.

82 Colour Bar/Camera Selection Switch (BAR/CAMERA)
When used in a system, this switch can select the camera mode or colour bar mode regardless of the Selection Switch (27) on the camera.

BAR : The EBU colour bar is provided from the Video Output Connectors (106 & 107) on the RCU.

CAMERA : The system is in operating condition after necessary adjustments.

83 Auto Centering Set Switch (AUTO CENT HOLD/SET)
This switch sets the horizontal and vertical centering of the red and blue picture to coincide with the green picture. Centering setting is necessary when CENT blinks in the viewfinder and the CHECK video monitor connected to the Video Output 2/CHECK Connector (107).

84 Auto White/Auto Black Set Switch (AWC SET/HOLD/ABC)
This switch sets the white balance and black balance automatically as follows;

AWC SET: This position is used for setting the white balance when the White Balance Selection Switch (86) is set to the AWC position. White balance setting is necessary when WHITE, AWC 1 or AWC 2 blinks in the viewfinder and the CHECK video monitor connected to the Video Output 2/Check Connector (107).
White balance for two different light sources such as indoor and outdoor can be set by setting the AWC Selection Switch (85) to AWC 1 or 2.

HOLD : This position holds the white balance and black balance set at AWC SET and ABC position for a long period of time.

ABC : This position is used for setting the black balance when the White Balance Selection Switch (86) is set to the ATW or AWC position. Black balance setting is necessary when BLACK blinks in the viewfinder and the CHECK video monitor.

Note : Since the black balance at the 0dB and +12dB mode of the high gain selection switch is set alternately by selecting the 0dB and +12dB position automatically, the picture on the viewfinder and the video monitor flashes while the black balance is being set.

85 AWC Selection Switch (AWC 1/2)
The white balance for two different light sources such as indoor and outdoor can be set by selecting this switch to AWC 1 or 2 when the White Balance Selection Switch (86) is in the AWC position.

86 White Balance Selection Switch (ATW/AWC/MANUAL)
This switch selects the operational condition of white balance as follows;

ATW : The white balance is automatically set by detecting the characteristic/colour temperature of the light source with the ATW sensor (1) and controls the gain of red and blue signal even if the characteristic/colour temperature changes.

Note : (1) The Filter wheel (35) must be set to position 1 in this operation.
(2) If the camera is used with the lens other than WV-LZ33/10E outdoor in the ATW position, the lens iris may hunt continuously. In this case, the ND filter which reduces the light intensity more than 1/8 should be mounted on the lens.

AWC : The white balance can be set automatically by the Auto White/Auto Black Set Switch (84). The white balance for two different light sources such as indoor and outdoor can be set by setting the AWC Selection Switch (85) to AWC 1 or 2.

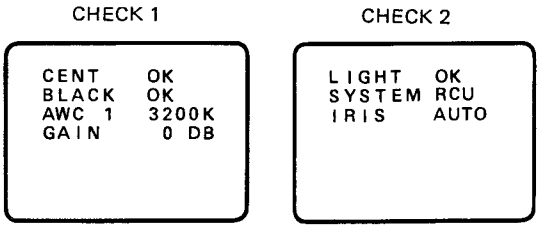
MANUAL : The white balance and black balance can be adjusted by the Red and Blue Gain Control (89 & 90) and the Red and Blue Pedestal Control (92 & 93).

Note :
1. Set to the ATW position if quick set up is required or the characteristic/color temperature of the light is likely to fluctuate during shooting.
2. Use the AWC position if the characteristic/color temperature of scene is stable.
3. Set to the MANUAL position for manual white and black balance setting.

87 CHECK ON/OFF Switch (ON/OFF)
In the ON position, the setting condition of the camera can be displayed in the viewfinder and the video monitor connected to the Video Output 2/CHECK Connector (107) as CHECK 1 and 2 display when the CHECK 1-2 button is pressed. In the OFF position, the CHECK display is not provided even if the CHECK 1-2 button is pressed; but the composite video signal is provided.
Set this switch to the OFF position if the Video Output 2/CHECK Connector (107) is used as a line output.

88 CHECK Button (CAMERA CHECK 1-2, RESET)
The setting condition of camera can be repeatedly displayed in the viewfinder and the video monitor, connected to the Video Output 2/CHECK Connector (107), as CHECK 1 and 2 displays by pressing the CHECK 1-2 button when the CHECK ON/OFF Switch (87) is in the ON position.
The CHECK display disappears when the CHECK RESET button is pressed.

Note : The CHECK display disappears when the automatic white balance, black balance or centering setting are activated.



89 Red Gain Control (R GAIN)
White balance can be set manually by this control and the blue gain control (90) when the White Balance Selection Switch (86) is set to the MANUAL position. Turn this control clockwise (or counterclockwise) to increase (or decrease) the R signal level.

90 Blue Gain Control (B GAIN)
White balance can be set manually by this control and the Red Gain Control (89) when the White Balance Selection Switch (86) is set to the MANUAL position. Turn this control clockwise (or counterclockwise) to increase (or decrease) the B signal level.

91 Total Pedestal Control (TOTAL PEDESTAL)
This control can adjust the pedestal level of the video signal (luminance). Turn this control clockwise (or counterclockwise) to increase (or decrease) the pedestal level.

92 Red Pedestal Control (R PEDESTAL)
Black balance can be set manually by this control and the Blue Pedestal Control (93) when the White Balance Selection Switch (86) is set to the MANUAL position. Turn this control clockwise (or counterclockwise) to increase (or decrease) the R pedestal level.

93 Blue Pedestal Control (B PEDESTAL)
Black balance can be set manually by this control and the Red Pedestal Control (92) when the White Balance Selection Switch (86) is set to the MANUAL position. Turn this control clockwise (or counterclockwise) to increase (or decrease) the B pedestal level.

94 Horizontal Phase Control for Gen-lock (H PHASE)
The horizontal phase of the camera signal is adjusted to match the horizontal phase of the signal at the Gen-lock Input Connector (103).

95 Subcarrier Phase Fine Control for Gen-lock (SC PHASE FINE)
This control allows fine adjustment of the subcarrier phase set by the Subcarrier Phase Coarse Switch (96). It gives continuous control of up to plus 90° subcarrier phase to match the phase of the burst signal at the Gen-lock Input Connector (103).

96 Subcarrier Phase Coarse Switch for Gen-lock (SC PHASE COARSE)
The subcarrier phase of the camera signal is adjusted from 0° to 360° in 90° steps with this switch for matching the phase of the burst signal at the Gen-lock Input Connector (103).

97 Cable Length Compensation Switch (CABLE COMP)
This switch is used for the cable length compensation of the 14-pin studio cable between the camera and RCU as follows;
10m (30ft) : Cable length less than 10m (30ft)
40m (120ft) : Cable length 10 -40m (30 - 120ft)
70m (210ft) : Cable length 40 -70m (120 -210ft)
100m(300ft): Cable length 70 -100m (210 - 300ft)

98 Total Gain Fine Control (FINE, TOTAL GAIN)
This control allows fine adjustment of the video signal level for the cable length compensation. Adjust this control after setting the Cable Length Compensation Switch (97).

99 Chroma Gain Fine Control (FINE, CHROMA GAIN)
This control allows fine adjustment of the chroma signal level for the cable length compensation. Adjust this control after setting the Cable Length Compensation Switch (97).

100 Lens Iris Control (IRIS AUTO-CLOSE/OPEN)
This control selects the operational condition of the auto iris power servo control zoom lens as follows;
AUTO : The iris level of the zoom lens is controlled automatically .
CLOSE/OPEN : The iris level of the zoom lens can be manually controlled by turning this control.
Note : The Iris Selection/Manual Control Knob (23) on the lens should be pushed to the AUTO position.

101 14-Pin Camera Connector (CAMERA)
14-pin studio cable is connected between the camera and RCU in the system operation.

102 Gen-lock Input Termination Switch (75Ω/Hi-Z)
When bridging or looping through the gen-lock signal, set this switch to the Hi-Z position. Otherwise, set it to the 75Ω position.

103 Gen-lock Input Connector (BNC) (GEN-LOCK IN)
These connectors are used to supply the gen-lock signal (black burst or composite signal) from the system reference.
Two connectors are provided for bridging or looping through applications.

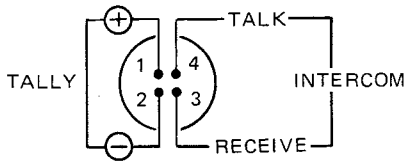
104 Auxiliary Input Termination Switch (75Ω/Hi-Z)
When bridging or looping through the auxiliary signal, set this switch in the Hi-Z position. Otherwise, set it to the 75Ω position.

105 Auxiliary Input Connector (BNC) (AUX IN)
These connectors are used to supply the lineview signal from the special effects generator. Two connectors are provided for bridging or looping through applications.

106 Video Output 1 Connector (BNC) (VIDEO OUT 1)
This connector is used to provide the composite video output signal to the special effects generator, the video monitor or VTR.

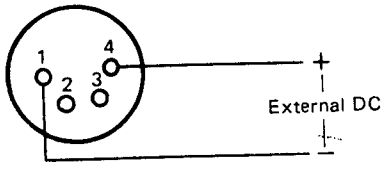
107 Video Output 2/CHECK Connector (BNC) (VIDEO OUT 2/CHECK)
This connector is used to provide the composite video output signal to the special effects generator, the video monitor or VTR.
The CHECK display is superimposed onto the video signal when the CHECK ON/OFF Switch (87) and the CHECK Button (88) are operated.

108 Tally and Intercom Input Connector (TALLY & INTERCOM)
The 4-pin cable is connected between this connector and the tally & intercom output of the special effects generator.



109 4-Pin External DC Input Connector (EXT DC)
This connector is used for connecting a cable from an external DC power source (a car battery for example). Maximum voltage that can be supplied is 22V DC.

Cable Length	DC Power Source
10m (30ft)	13V - 15V, more than 2.5A
40m (120ft)	15V - 18V, more than 2.2A
70m (210ft)	17V - 20V, more than 2A
100m (300ft)	19V - 22V, more than 1.8A



5" Viewfinder WV-VF65E

110 Tally Lamp
This tally lamp is operated only when this unit is used in full-system operation with RCU and special effects generator. The tally lamp informs the camera operator and others concerned that the camera system is actually recording the scene.

111 Contrast Control (CONTRAST)
Turn this control clockwise to increase picture contrast only in the viewfinder.

112 Brightness Control (BRIGHT)
Turn this control clockwise to increase picture brightness only in the viewfinder.

113 Tally ON/OFF Switch (TALLY ON/OFF)
This switch turns ON/OFF the tally lamp (110) located on the front of viewfinder.

114 Peaking ON/OFF Switch (PEAKING ON/OFF)
This switch is set to OFF position during normal operation. When the camera is aimed at a dimly lit scene, set the switch to ON to facilitate focusing in the viewfinder.

115 Viewfinder Adjusting Knob
The angle of the 5" viewfinder can be adjusted for easy viewing.

116 Tally Indicator
This tally indicator informs the camera operator that the camera system is actually recording the scene and sending it to the line output when this unit is used in full system operation with the RCU and special effects generator.

INSTALLATION FOR ENG/EFP OPERATION

A. WV-V3E ENG Colour Camera

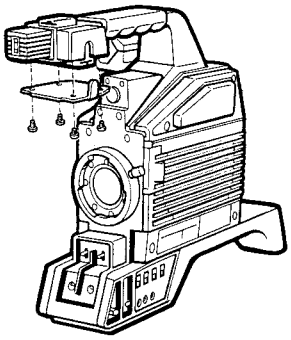
WV-V3E ENG colour camera is packed into a carrying case. The ENG/EFP colour camera can be assembled with the ENG colour camera which consists of a camera head, a 1.5" viewfinder, a 10 : 1 auto iris power servo control zoom lens and a microphone, and an AC adaptor/charger WV-PS31 or a battery pack WV-PS33E. For assembling, follow steps 4 to 6.

B. Colour Camera Head with Optional Accessories

The ENG/EFP colour camera can be assembled with the camera head WV-V3HE, 1.5" viewfinder WV-VF34E, 10:1 auto iris power servo control zoom lens WV-LZ33/10E, microphone WV-MC34E, and an AC adaptor/charger WV-PS31 or a battery pack WV-PS33E. Follow steps 1 to 6 for assembly.

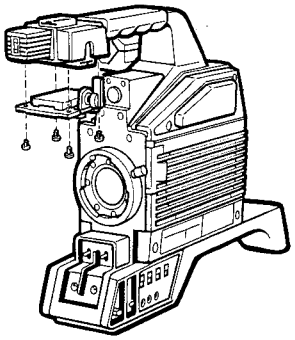
1. Mounting 1.5" Viewfinder WV-VF34E

o Remove the blank panel from the camera by unscrewing the four screws.

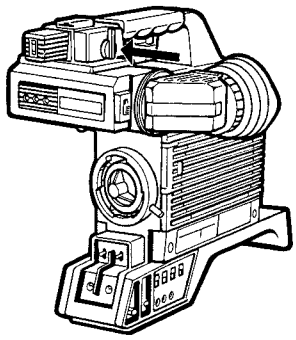


o Attach the viewfinder slide unit onto the camera with the four screws.

Note : The viewfinder lock lever on the viewfinder slide unit should be set upward when attaching.

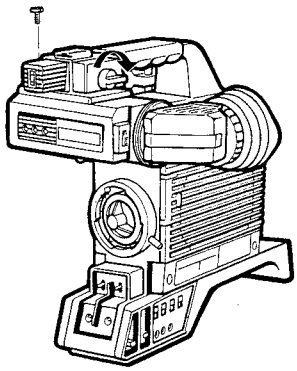


o Mount the viewfinder on the camera by sliding its mounting angle into the viewfinder slide unit.



o Attach the stopper screw onto the viewfinder. The stopper comes with the viewfinder.

Turn the viewfinder lock lever clockwise to secure the viewfinder.

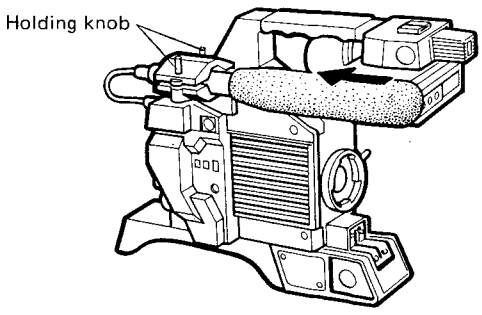


o Connect the viewfinder connector.

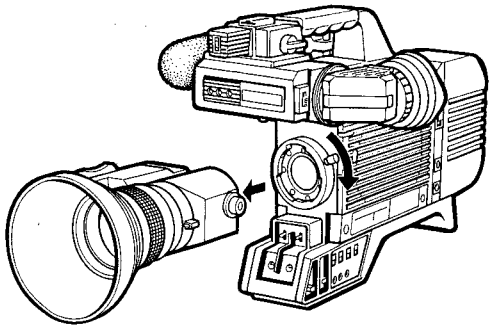
2. Mounting Microphone WV-MC34E

Loosen the two microphone holding knobs, slide the microphone into the microphone holder and turn the knobs to hold the microphone.

Connect the mic connector to the internal microphone connector.



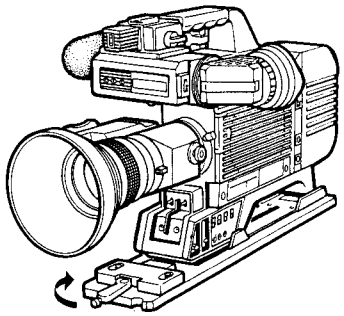
3. Mounting Lens WV-LZ33/10E or WV-LZ32/10
Remove the body cap by turning the lens hold ring/knob counterclockwise. Attach the 10:1 auto iris power servo control zoom lens WV-LZ33/10E or WV-LZ32/10 into the lens mount and turn the lens hold ring/knob clockwise to hold the lens securely. Connect the lens cable to the lens connector.
When mounting a zoom lens for 2/3" pick-up tube such as the optional WV-LZ30/12, an optional lens mount adaptor WV-AD34 is required.
Refer to INSTALLATION OF OPTIONAL LENS MOUNT ADAPTOR WV-AD34 on page 24.



4. Mount Battery Pack or AC Adaptor/Charger for ENG Use
Refer to INSTALLATION FOR BATTERY PACK on page 19 and INSTALLATION OF AC ADAPTOR/CHARGER WV-PS31 on page 21.

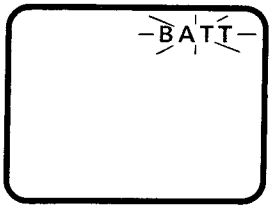
5. Mounting RCU/GEN-LOCK Adaptor for EFP Use
Refer to INSTALLATION FOR RCU/GEN-LOCK ADAPTOR WV-AD33E on page 24.

6. Mounting Tripod Mounting Adaptor
While pushing the lock release button set the lock lever on the tripod mounting adaptor to the right side (viewed from the front). Place the camera on the tripod mounting adaptor and lock the camera by turning the lock lever to the lock position.

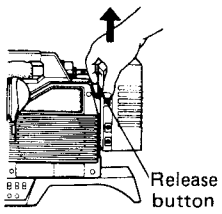


INSTALLATION OF BATTERY PACK

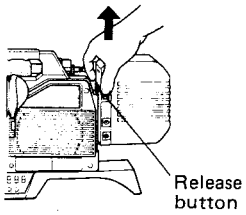
When the battery pack WV-PS60E or WV-PS33E is used with the ENG/EFP colour camera, the following installation procedure should be followed. A new battery should be charged prior to the operation.
When the blinking BATT is displayed in the EVF, replace or recharge the battery pack. The battery lasts only few minutes after the blinking BATT is displayed.



1. Disconnect the battery cord from the battery connector.
2. Remove the battery pack from the camera by sliding it up while pressing the battery pack release button.

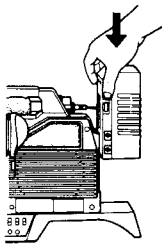


WV-PS60E

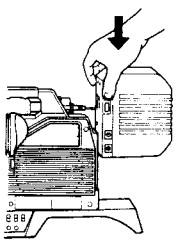


WV-PS33E

3. Install the battery pack on the camera by sliding it down until it stops after engaging the mounting mechanism on the rear chassis of camera and battery pack.



WV-PS60E



WV-PS33E

4. Connect the battery cord to the battery connector.
Note : The WV-PS60E operates for one hour and the WV-PS33E for two hours. A battery pack may operate for less than the specified hours since it has been already discharged to a low level. Therefore, please be sure that the battery pack is fully charged before any important shooting.

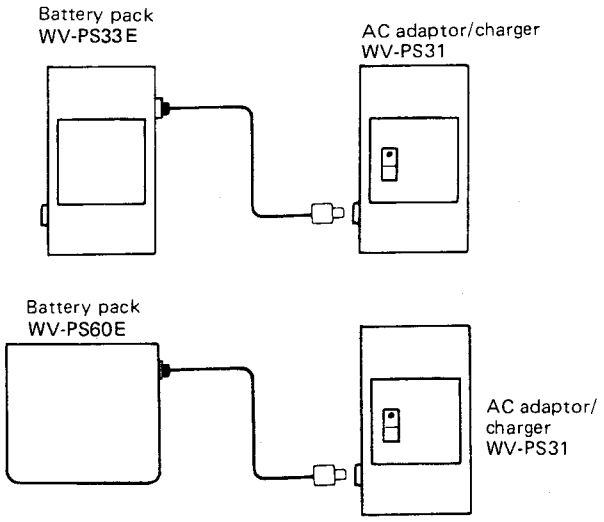
CHARGING OF BATTERY PACK WV-PS33E AND WV-PS60E

The battery pack can be charged by the charger as follows;

Battery Pack	Battery Charger	Charging Time (Approximately)
WV-PS33E	AC Adaptor/Charger WV-PS31	3 hours in quick mode 14 hours in slow mode
	Charger WV-BC30	14 hours
WV-PS60E	AC Adaptor/Charger WV-PS31	1.5 hours in quick mode 14 hours in slow mode
	Charger DE-1232E	14 hours

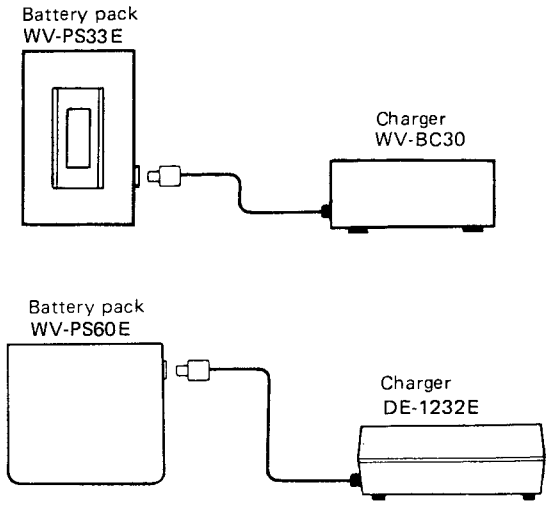
Note : (1) A new battery should be charged prior to the operation.
(2) Remove the battery pack from the camera when charging.

Quick Charging with WV-PS31



Note : (1) Quick charging is completed after approximately 3 hours for WV-PS33E and 1.5 hour for WV-PS60E. The charge indicator on the charger changes from red to green to inform that it has converted to the slow charging mode.
(2) It is recommended that the battery pack be charged approximately 14 hours (not more than 24 hours) in the slow charging mode for long life.

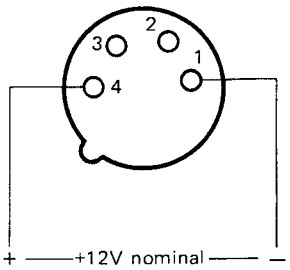
Slow charging with WV-BC30 and DE-1232E



Note : It is recommended that the battery pack be charged for approximately 14 hours (not more than 24 hours) for longer life.

EXTERNAL DC INFORMATION

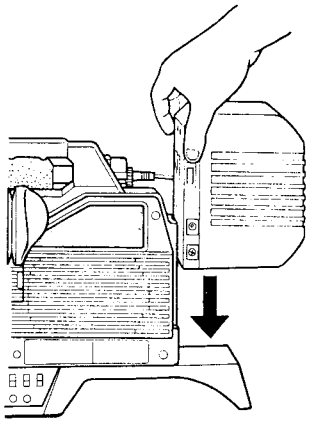
The camera can receive external DC power through the 4-pin external DC connector. The 4-pin connection for the external DC power source is shown below.



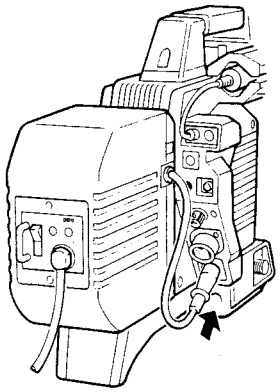
INSTALLATION OF AC ADAPTOR/ CHARGER WV-PS31

When the AC adaptor/charger WV-PS31 is used with the ENG/EFP colour camera as an AC adaptor, the following installation procedure should be followed.

1. Install the AC adaptor/charger on the camera by sliding it down until it stops after engaging the mounting mechanism on the rear chassis of camera and battery pack.

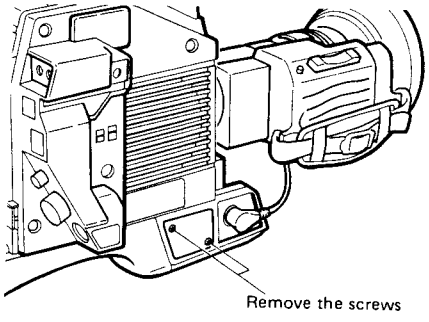


2. Connect the 4-pin cable to the 4-pin connector on the camera.

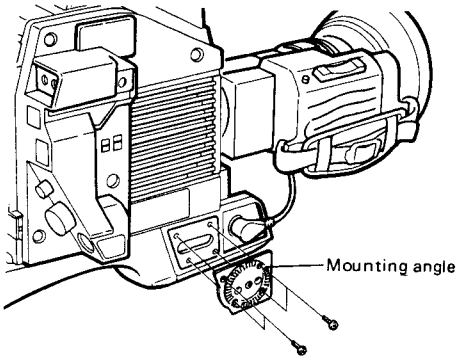


INSTALLATION OF CHEST PAD WV-Q30E

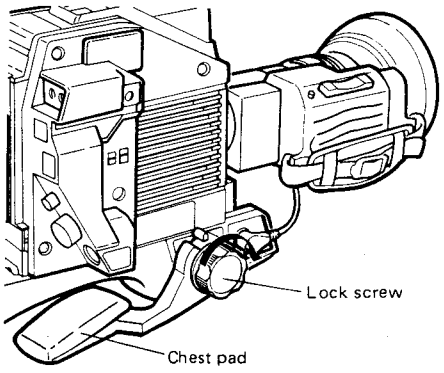
1. Remove the blank panel on the left side of the camera (viewed from the front) by unscrewing two screws.



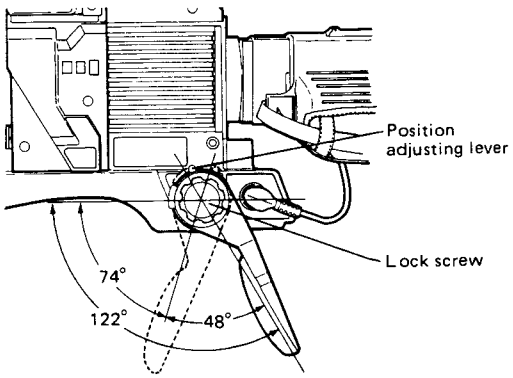
2. Remove the chest pad mounting angle from the chest pad by turning the lock screw counterclockwise. Attach the mounting angle to the camera with four (supplied) screws.



3. Mount the chest pad to the mounting angle by tightening the lock screw after engaging the guides on both the chest pad and the mounting angle.



4. The position of chest pad can be adjusted by setting the position adjusting lever on the pad after loosening the lock screw.
Tighten the lock screw to secure the chest pad.



INSTALLATION FOR STUDIO OPERATION

A. Conversion from ENG Camera

The studio camera can be converted from the ENG camera and outfitted with a 5" viewfinder WV-VF65E, a remote control unit WV-RC33, a 10:1 auto iris power servo control zoom lens WV-LZ32/10 and a lens control kit WV-LK32 for WV-LZ32/10. To do that, follow the procedure from step 1 to 9.

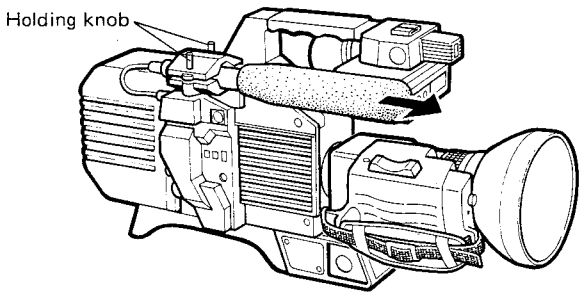
Note : The auto iris power servo control zoom lens WV-LZ33/10 cannot be used with the lens control kit WV-LK32.

B. Studio Configuration

The studio camera is assembled with a camera head WV-V3HE, a 5" viewfinder WV-VF65E, an RCU/gen-lock adaptor WV-AD33E, a remote control unit WV-RC33, a 10:1 auto iris power servo control zoom lens WV-LZ32/10, a lens control kit WV-LK32 for WV-LZ32/10 and a tripod mounting adaptor WV-Q36E. Follow steps 5 to 9.

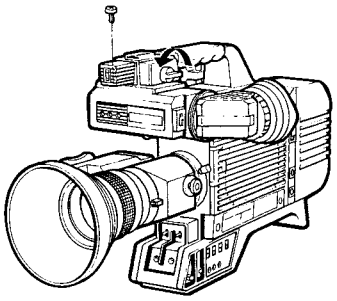
1. Disassembling Microphone

Disconnect the mic connector from the internal microphone connector and remove the microphone by loosening the two microphone holding knobs.

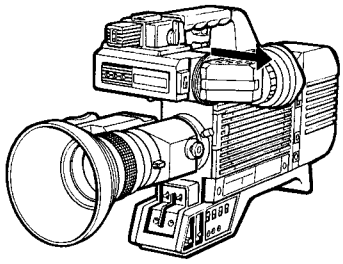


2. Disassembling 1.5" Viewfinder

o Disconnect the viewfinder connector, remove the screw for the stopper and unlock the viewfinder lock lever.



o Remove the viewfinder by sliding it out from the viewfinder slide unit.



3. Disassembling Battery Pack WV-PS33E or AC adaptor/Charger WV-PS31

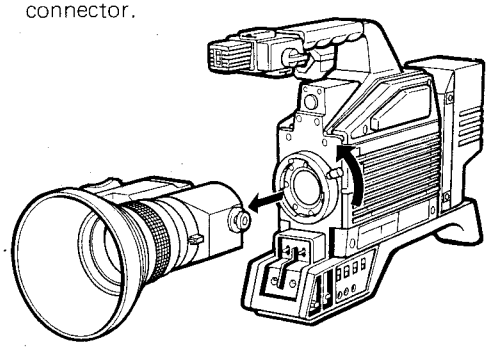
Refer to INSTALLATION OF BATTERY PACK on page 19 and INSTALLATION OF AC ADAPTOR/CHARGER WV-PS31 on page 21.

4. Mounting RCU/GEN-LOCK Adaptor WV-AD33E

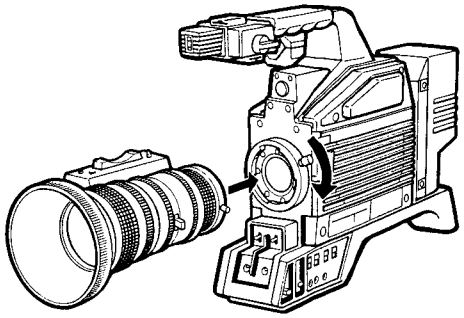
Refer to INSTALLATION OF RCU/GEN-LOCK ADAPTOR WV-AD33E on page 24.

5. Mounting Lens WV-LZ32/10

o Remove the auto iris power servo control zoom lens WV-LZ33/10E for ENG/EFP operation or body cap by turning the lens hold ring/knob counterclockwise after disconnecting the lens connector.

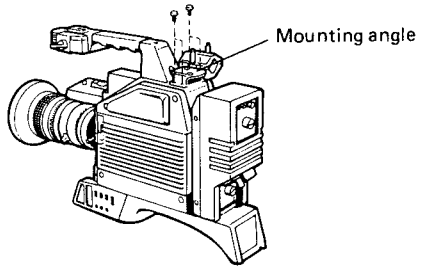


o Attach the 10:1 auto iris power servo control zoom lens WV-LZ32/10 into the lens mount and turn the lens hold ring/knob clockwise to hold the lens securely. Connect the lens connector. When mounting a zoom lens for 2/3" pick-up tube, lens mount adaptor WV-AD34 is required. Refer to INSTALLATION OF LENS MOUNT ADAPTOR WV-AD34 on page 24.

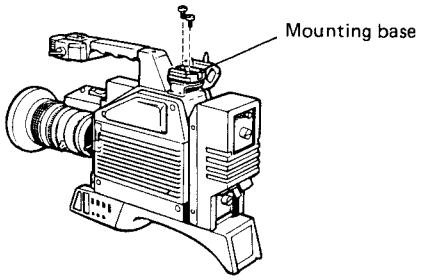


6. Mounting 5" Viewfinder

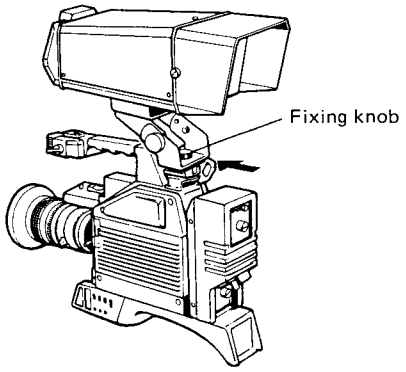
o Remove four screws from the top of camera. Attach the viewfinder mounting angle on the camera with the screws.



o Attach the round viewfinder mounting base on to the mounting angle with two screws.

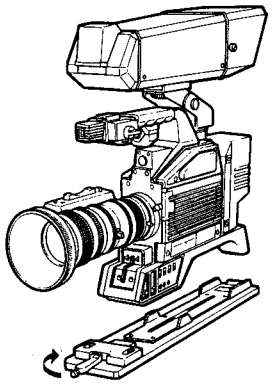


o Slide the viewfinder into the mounting base and tighten the fixing knob to secure the viewfinder. Connect the viewfinder connector.



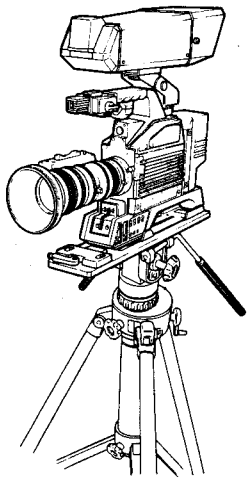
7. Mounting Tripod Mounting Adaptor

While pushing the lock release button, set the lock lever on the tripod mounting adaptor to the right side (viewed from the front). Place the camera on the adaptor and lock the camera by turning the lock lever to the lock position.



8. Mounting Camera on Tripod

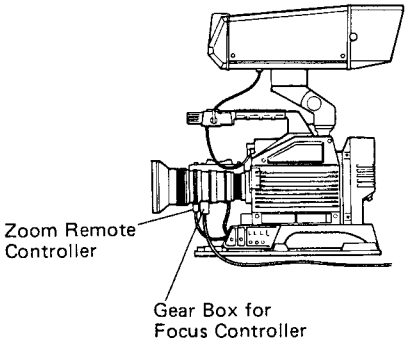
Mount the camera onto the tripod by screwing the mounting screw on the tripod into the mounting hole (standard N.C. 1/4"-20 thread or 3/8"-16 thread) on the bottom of the tripod mounting adaptor.



9. Mounting Lens Control Kit WV-LK32 for WV-LZ32/10

Unscrew the cap for zoom remote controller connector on the power servo control zoom lens and connect the zoom remote controller. Install the gear box for focus control at the bottom of the lens and connect the flexible cable from the focus controller to the gear box.

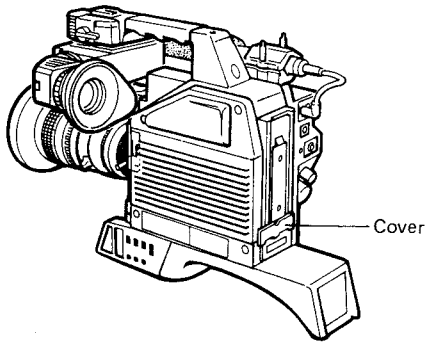
Install the zoom controller on the right tripod arm and the focus controller on the left tripod arm.



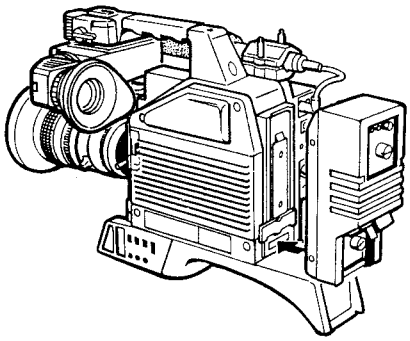
INSTALLATION OF RCU/GEN-LOCK ADAPTOR WV-AD33E

When the RCU/gen-lock adaptor is used with the camera for the EFP and studio application, the following procedure should be followed.

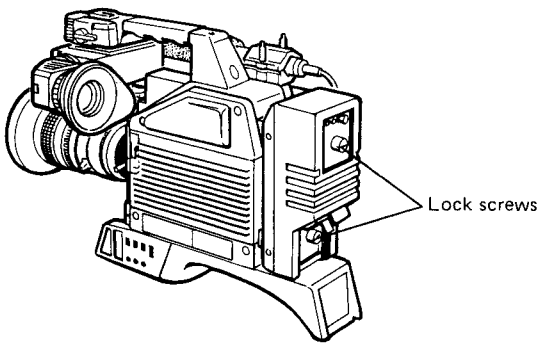
1. Lift up the cover for the 32-pin junction connector on the RCU/gen-lock adaptor.



2. Mount the RCU/gen-lock adaptor on the camera while connecting the 32-pin junction connector on the camera and the RCU/gen-lock adaptor.



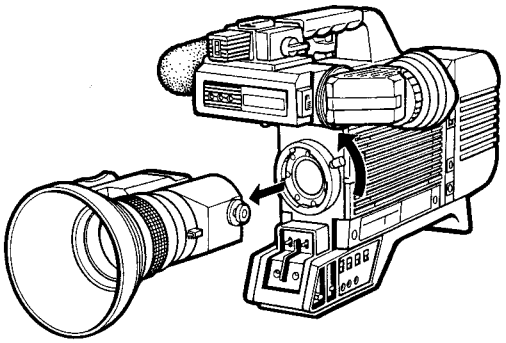
3. Turn the two lock screws clockwise to mount the RCU/gen-lock adaptor securely.



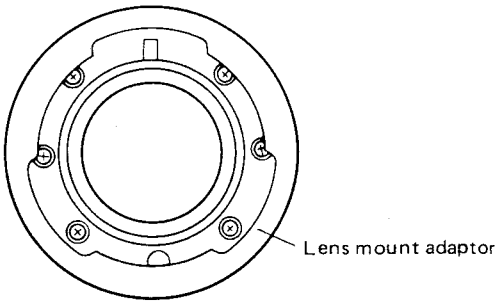
INSTALLATION OF LENS MOUNT ADAPTOR WV-AD34

If the lens mount adaptor is replaced, a power servo control zoom lens for a 2/3" pick-up tube such as optional 12:1 servo control zoom lens WV-LZ30/12 can be used with the camera. Install to the lens mount adaptor WV-AD34 with the following procedure.
Refer replacement to qualified service personnel.

1. Disassembling Zoom Lens or Body Cap
   Remove the zoom lens or body cap by turning lens hold ring/knob counterclockwise.



2. Disassembling Attached Lens Mount Adaptor
   Remove the attached lens mount adaptor from the camera by removing six screws.



3. Install the lens mount adaptor WV-AD34 on the camera with six screws.

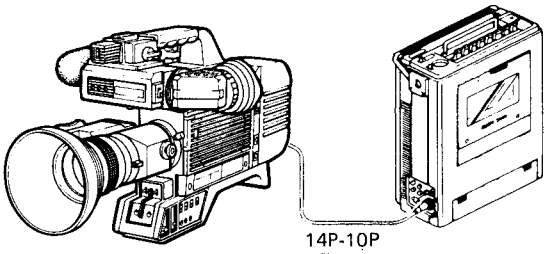
4. Attach the power servo control zoom lens for 2/3" pick-up tube such as optional WV-LZ30/12 into the lens mount and turn the lens hold ring/knob clockwise to hold the lens securely. Connect the lens cable to the lens connector.

CONNECTIONS FOR ENG/EFP APPLICATIONS

CAUTION : Keep the power switch on the camera in the OFF position during connection.

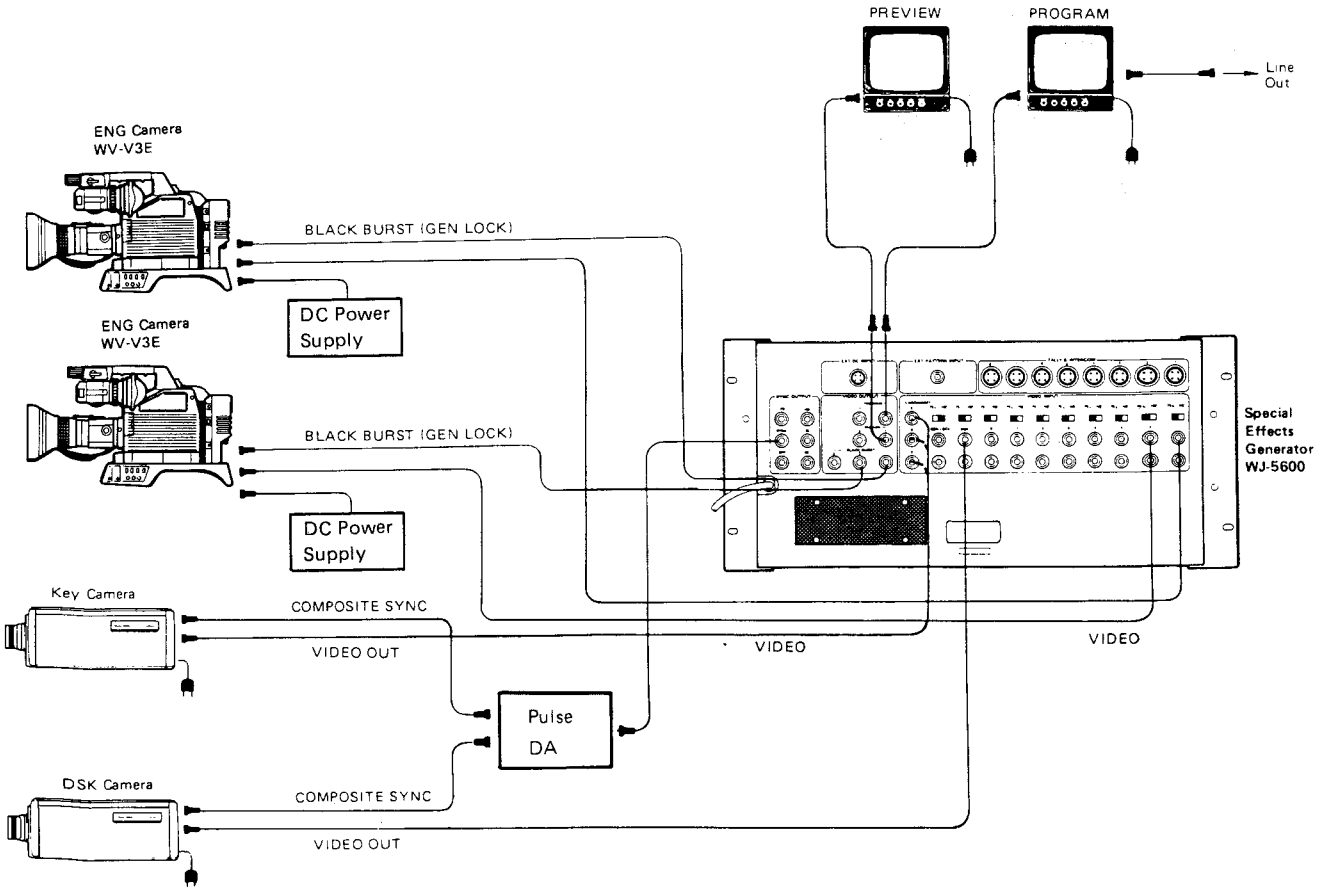
1. ENG Application

- o Connect the VTR cable between the camera and the Panasonic portable colour VTR (Standard VTR cable length is 3 m (10ft).
  Portable VTR with 10-pin camera connector, such as NV-180 :
  VTR cable WV-CA14/10 (14P-10P cable)
  Portable VTR with 14-pin camera connector :
  VTR cable WV-CA14/14 (14P-14P cable)
- o Keep the power OFF on the Panasonic portable colour VTR during connection.



2. Gen-Lock EFP Application

- o Mount the RCU/gen-lock adaptor WV-AD33E on the camera by referring to INSTALLATION OF RCU/ GEN-LOCK ADAPTOR on page 24.
  Note : The power for the camera should be supplied to the 4-pin External DC Input Connector (57) from the external DC power supply.
- o Connect the coaxial cable for gen-lock signal between the Gen-Lock Input Connector (67) (BNC type) on the RCU/gen-lock adaptor and the black burst output connector on the production system.
- o Connect the coaxial cable for video output signal between the Video Output Connector (55) (BNC type) on the camera and the video input connector on the production system.
  Note : (1) The following signal outputs can be used as gen-lock signals; WJ-5600, WJ-5500E/N, WJ-4600 : Black burst output.
  (2) The black burst output should be synchronized to system reference.
  (3) Refer to the operating instructions of the special effects generator such as WJ-5600, WJ-5500E/N, WJ-4600.

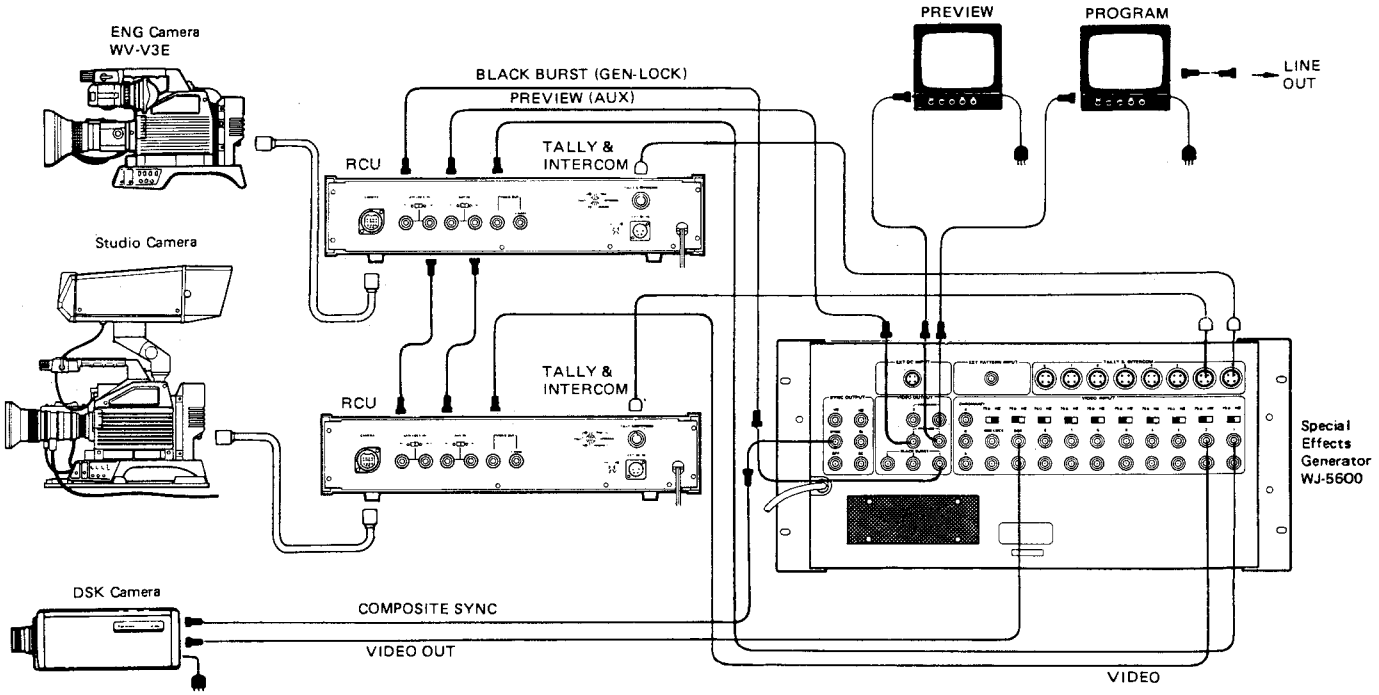


3. Gen-Lock EFP with RCU Application

- o Mount the RCU/gen-lock adaptor WV-AD33E on the camera by referring to INSTALLATION OF RCU/ GEN-LOCK ADAPTOR on page 24.
- o Connect the 14-pin studio cable between the RCU/ gen-lock adaptor and RCU.
- o Connect the coaxial cable for video output signal between the Video Output 1 Connector (106) on the RCU and the video input on the production system.
- o Connect the coaxial cable for gen-lock signal between the black burst output on the production system and the Gen-Lock Input Connector (103) on the RCU (which may be bridged or looped through to another RCU).
- o Connect the coaxial cable for lineview signal between the effect output on the production system and the Auxiliary Input Connector (105) on the RCU (which may be bridged or looping through to another RCU).

Note : (1) The tally and intercom between the camera, RCU and special effects generator will function only when the 4-pin cable for tally and intercom is connected between RCU and S.E.G.

(2) The 14-pin studio cable can be extended for a maximum distance of 100m (approximately 300ft). Cable Length Compensation Switch (97) should be set to the appropriate position according to cable length.



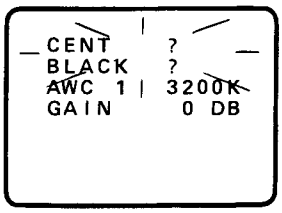
CONNECTION FOR STUDIO APPLICATIONS

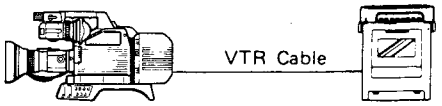
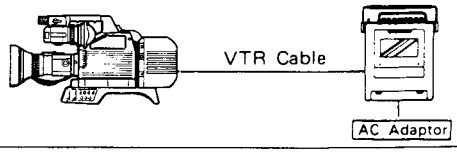
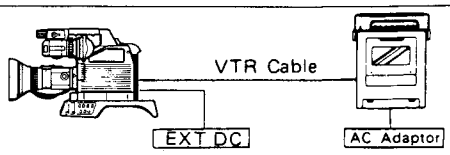
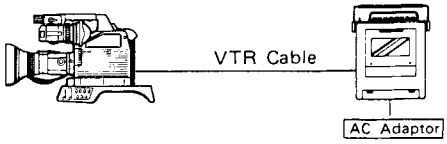
- o The studio cameras with RCU are connected according to the same scheme as for gen-lock EFP with RCU application when these studio cameras are used in a production system.

OPERATING PROCEDURE FOR ENG/EFP APPLICATIONS

1. ENG Application

1) Make all the required connections.
2) Remove the lens cap.
3) Select the power source according to the table below.
When the power switch is turned ON, the following display appears. It disappears when the automatic black balance, white balance or centering is set or the CHECK RESET Button is pressed.

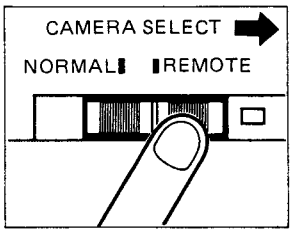


Case No.	Camera Power	Portable VTR Power	Power Switch 53	Descriptions
1	Battery pack	Internal battery	EXT/BATT/AC ADP	
2	AC adaptor	Internal battery or AC adaptor	EXT/BATT/AC ADP	
3	External DC	Internal battery or AC adaptor	EXT/BATT/AC ADP	
4	Supplied from VTR	AC adaptor	VTR/RCU	

Note : 1. The cable distance between the camera and the VTR can be extended up to 10m (33 ft) for the Case No. 4 and up to 30 m (100 ft) for the Case No. 1, 2 and 3.
2. It is not recommended to supply the camera power from the built-in battery in the portable VTR since the recording time is short.

4) Set the VTR Selection Switch (41) as follows.
VTR with 10-pin camera connector, such as NV-180 : 10P position
VTR with 14-pin camera connector : 14P position

5) Turn both the camera and the portable VTR ON and set the portable VTR into the RECORD mode.
(a) For portable VTR with the Camera Remote Switch such as Panasonic portable VTR NV-180
o Set the camera remote switch on the portable VTR to REMOTE position.



(b) For other portable VTR without the Camera Remote Switch
o Press the Record and Play button together.

6) Set the High Gain Selection Switch (29) to the 0dB position.

7) Set the Colour Bar/Camera Selection Switch (27) to the CAMERA position.

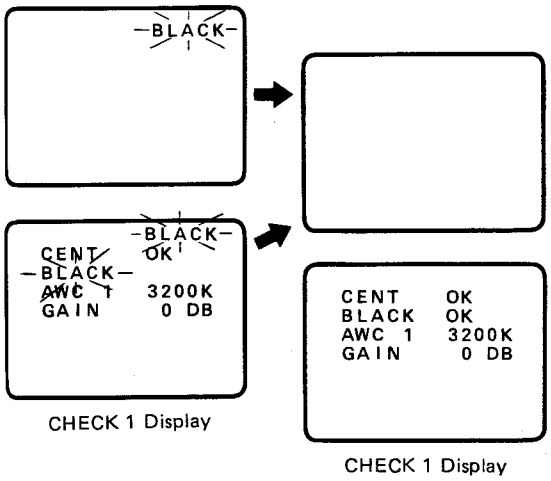
8) Set the Standby/Operate Selection Switch (28) to the OPERATE position.

9) Select the proper filter according to colour temperature using the Filter Wheel (35) according to the table on page 40.

Note : 1. If the camera is operated in the auto tracing white-balance (ATW) mode by setting the White Balance Selection Switch (32) to ATW position, the Filter Wheel must be set to No. 1 position.
2. The filter position is displayed in the viewfinder in the CHECK operation.

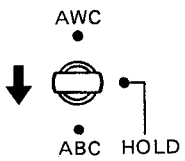
10) Set the Iris Selection/Manual Control Knob (23) on the auto iris power servo control zoom lens to the AUTO position.

11) Set the black balance as follows.
Set the Auto White/Auto Black Set Switch (14) to the ABC position momentarily by pressing it down.
The lens iris is automatically closed blocking the incoming light and the black balance is set automatically in approximately 6 seconds. After completing the black balance setting, the lens iris is automatically returned to the previous position. The BLACK in the viewfinder is blinking while the black balance is being set and it goes off when the black balance is completed. If the blinking BLACK remains, reset the black balance.
Refer to BLACK BALANCE SETTING on page 37 for the details.



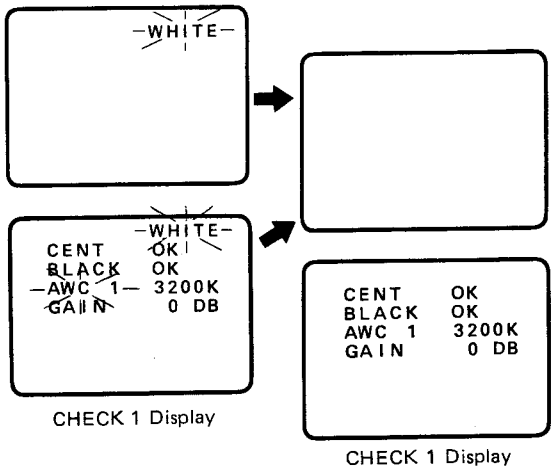
CHECK 1 Display

CHECK 1 Display



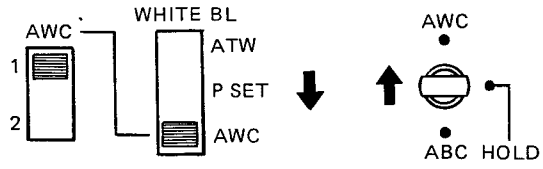
12) Set the white balance by the following instructions.
a. Automatic tracing white-balance (ATW) operation:
Set the White Balance Selection Switch (32) to the ATW position and the Filter Wheel (35) to position 1.
The white balance is automatically set by detecting the characteristic/colour temperature of light which illuminates the scene. It is recommended to use ATW position if quick setting up is required or the characteristic/colour temperature of light would vary during shooting.

b. Automatic white balance setting :
Set the White Balance Selection Switch (32) to the AWC position and the AWC Selection Switch (33) to AWC 1 or 2.
While aiming the camera at the white object such as white paper, set the Auto White/Auto Black Set Switch (14) to the AWC position momentarily by pressing it up. The white balance is automatically set. When the white balance is completed, the blinking WHITE disappears and/or the AWC 1 or AWC 2 stops blinking in the viewfinder. If the blinking WHITE and/or AWC 1 or AWC 2 remain, reset the white balance after confirming the position of Filter Wheel (35) by referring to the table on page 40.
Refer to WHITE BALANCE SETTING on page 38 for the details.



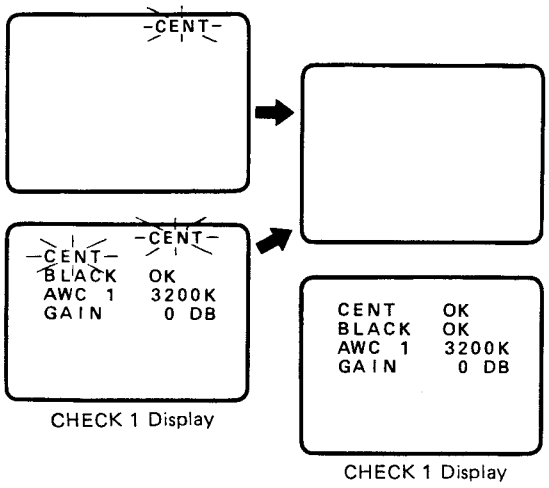
CHECK 1 Display

CHECK 1 Display



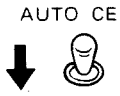
13) Set the centering as follows.
While aiming the camera at the registration chart or normal scene/object such as human, dolls or flowers etc., press down the Auto Centeing Set Switch (17) momentarily to activate the automatic centering setting. The horizontal and vertical centering of red and blue picture are automatically adjusted to match the green picture in maximum 5 seconds. The CENT is blinking in the viewfinder while the centering is being set. The CENT disappears and the CENT OK is displayed in the CHECK operation when the centering setting is completed.

If the blinking CENT remains even after repeating the automatic centering setting, reset the centering while referring to AUTO CENTERING SETTING on page 40.



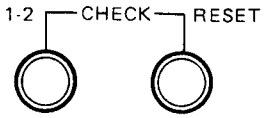
CHECK 1 Display

CHECK 1 Display

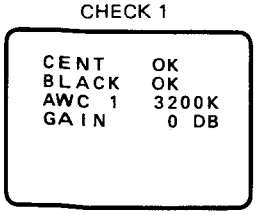


14) Confirm the flangeback adjustment of the lens as follows.
- o Aim the camera at an object further than 2m (6 feet) from the camera.
- o Zoom in (close-up/telephoto) with the Power Servo Zoom Control (4) and adjust the lens focus with the Focus Ring (24).
- o Zoom out (wide angle) and confirm that the picture is in focus. If not, adjust the flangeback of the lens by referring to LENS FLANGEBACK ADJUSTMENT on page 41.

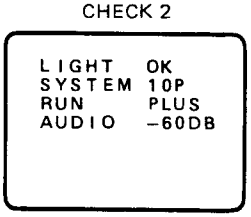
15) Reconfirm the condition of camera by depressing the CHECK 1-2 Button (31). Press the Reset Button for the normal picture.
Refer for details to 3 CHECK DISPLAY on page 44.



CHECK 1



CHECK 2

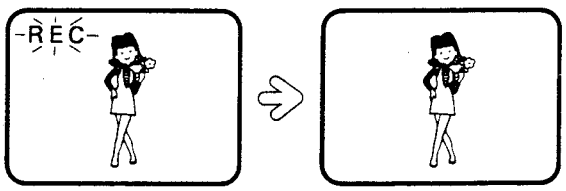


16) Adjust the zoom lens with the Power Servo Zoom Control (4) or Zoom Ring/Lever (25) to have the desired picture composition.

17) Turn the Focus Ring (24) to get the best focus by watching the picture in the viewfinder. For macro function : Turn the Zoom Ring/Lever to macro range while depressing the Macro Knob for close-up picture as close as 5cm (2").

18) Press the VTR Start/Stop Button (16) or (45) on the lens.
The blinking REC is displayed in the viewfinder, the Power Indicator (54) blinks and the Tally Light (3) on the viewfinder lights during the recording.

19) Press the VTR Start/Stop/Button (16) or (45) to stop recording any time. The blinking REC disappears, the Power Indicator (54) stops blinking and the Tally Light (3) turns OFF. Press the button again to resume recording.



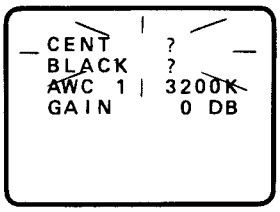
20) When the recording is finished and playback is desired, depress STOP on the recorder. Rewind the tape to the beginning of the recording and proceed to play back.
When the Rec Review Button (30) on the camera is pressed after recording and the portable VTR NV-180 is in pause mode, the VTR automatically rewinds and plays back the tape for approximately 2 seconds to make sure the recording conditions.

Note : 1. Do not aim the camera at excessively bright objects for a long time since the pick-up tube may be damaged. Also keep the microphone away from loud sounds (such as the speaker of the TV), since howling noise (feedback) may occur.
2. If the object/scene condition is darker and the light intensity is not sufficient, it is recommended to set the High Gain Selection Switch (29) to the +6dB or +12dB position.

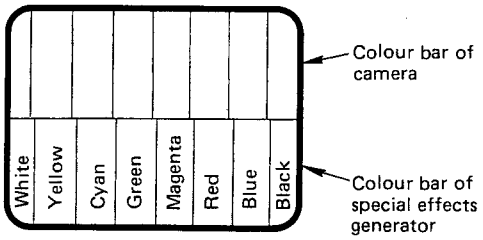
2. Gen-Lock EFP Application

(The RCU/gen-lock adaptor should be mounted on the camera for this application and the power for the camera should be supplied to the 4-pin External DC Input Connector (57) from an external DC power supply.)

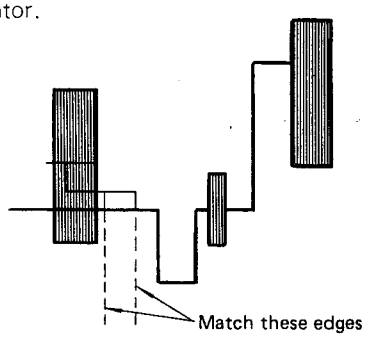
1) Make all the required connections.
2) Set the Power Switch (53) to the EXT/BATT/AC ADP position.
   When the power switch is turned ON, the following display appears. It disappears when the automatic black balance, white balance or centering is set or the CHECK RESET Button is pressed.



3) Set the Colour Bar/Camera Selection Switch (27) to the BAR position.
4) Set the Standby/Operate Selection Switch (28) to the OPERATE position.
5) Adjust the horizontal phase of camera as follows.
   - o Set the switches and controls on the special effects generator so that the split picture of colour bars is observed on the programme output monitor.
     Refer for the details to the operating instructions of the special effects generator.

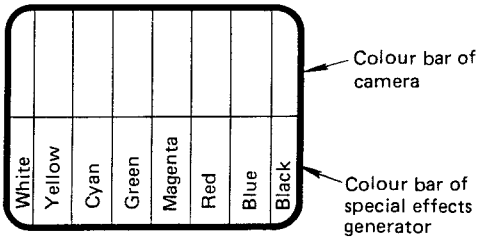


   - o Connect the oscilloscope to the PROGRAM OUTPUT connector of special effects generator and observe the horizontal blanking period of the PROGRAMME OUTPUT signal.
   - o Adjust the Horizontal (H) Phase Control (69) on the RCU/gen-lock adaptor so that the phase of horizontal blanking of the colour bar signal for the camera matches that for the special effects generator.



   - o The horizontal phase of the camera can be roughly adjusted by observing the split picture on the programme output monitor after selecting switches and controls as mentioned previously. Adjust the Horizontal (H) Phase Control (69) on the RCU/gen-lock adaptor so that the edges of colour bar for the camera and special effects generator roughly match each other.

     Note : The horizontal phase should be readjusted as well as the subcarrier phase explained next if the connection or length of coaxial cable is changed in the system.



6) Adjust the subcarrier phase of camera as follows.
   - o Set the switches and controls on the special effects generator so that the split picture of colour bar is observed on the programme output monitor.

     Refer for the details to the operating instructions of the special effects generator.
   - o Adjust the Subcarrier (SC) Phase Coarse Switch (71) and Fine Control (70) on the RCU/gen-lock adaptor so that colour of the colour bar for the camera is maximum and is similar to that for special effects generator.
   - o Precise adjustment should be done by using the vectorscope. Supply the PROGRAMME OUTPUT signal to the vectorscope from the special effects generator. While observing the vectorscope, adjust the Subcarrier Coarse Switch (71) and Fine Control (70) so that the phase of colour bar of camera matches that of special effects generator on the vectorscope.
7) Set the Colour Bar/Camera Selection Switch (27) to the CAMERA position.
8) Set the High Gain Selection Switch (29) to the 0dB position. If the object/scene condition is darker and light intensity is insufficient, it is recommended to set the switch to the +6dB or +12dB position.

9) Select the proper filter according to colour temperature using the Filter Wheel (35) according to the table on page 40.

Note : 1. If the camera is operated in the auto tracing white-balance (ATW) mode by setting the White Balance Selection Switch (32) to ATW position, the Filter Wheel must be set to No. 1 position.

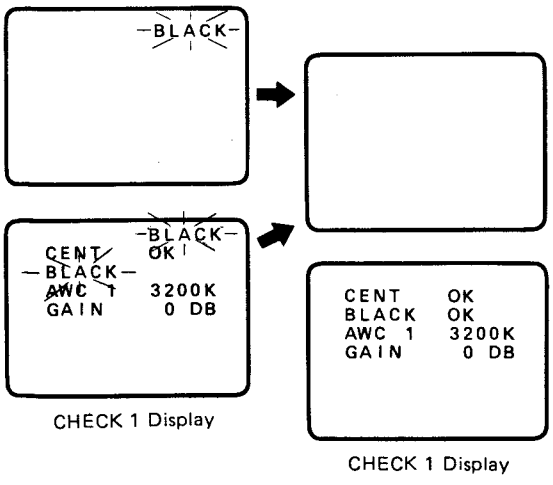
2. The filter position is displayed in the viewfinder in the CHECK operation.

10) Set the Iris Selection/Manual Control Knob (23) on the zoom lens to the AUTO position.

11) Set the black balance as follows.

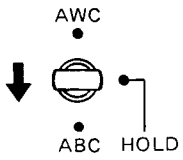
Set the Auto White/Auto Black Set Switch (14) to the ABC position momentarily by pressing it down. The lens iris is automatically closed blocking the incoming light and the black balance is set automatically in approximately 6 seconds. After completing the black balance setting, the lens iris is automatically returned to the previous position. The BLACK in the viewfinder is blinking while the black balance is being set and it goes off when the black balance is completed. If the blinking BLACK remains, reset the black balance.

Refer to BLACK BALANCE SETTING on page 37 for the details.



CHECK 1 Display

CHECK 1 Display



12) Set the white balance by the following instructions.

a. Automatic tracing white-balance (ATW) operation:

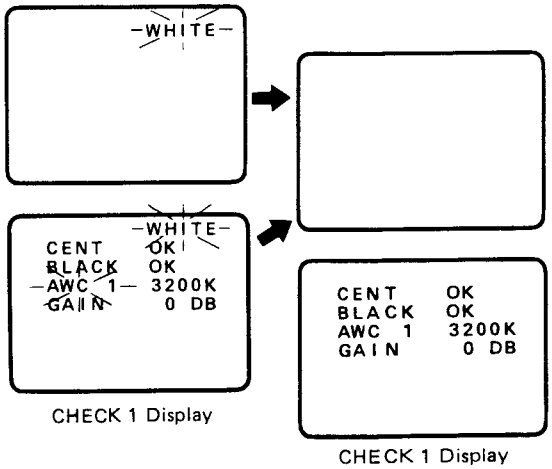
Set the White Balance Selection Switch (32) to the ATW position and the Filter Wheel (35) to position 1. The white balance is automatically set by detecting the characteristic/colour temperature of light which illuminates the scene. It is recommended to use ATW position if quick setting up is required or the characteristic/colour temperature of light would vary during shooting.

b. Automatic white balance setting :

Set the White Balance Selection Switch (32) to the AWC position and the AWC Selection Switch (33) to AWC 1 or 2.

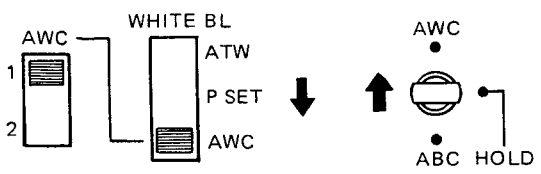
While aiming the camera at the white object such as white paper, set the Auto White/Auto Black Set Switch (14) to the AWC position momentarily by pressing it up. The white balance is automatically set. When the white balance is completed, the blinking WHITE disappears and/or the AWC 1 or AWC 2 stops blinking in the viewfinder. If the blinking WHITE and/or AWC 1 or AWC 2 remain, reset the white balance after confirming the position of Filter Wheel (35) by referring to the table on page 40.

Refer to WHITE BALANCE SETTING on page 38 for the details.

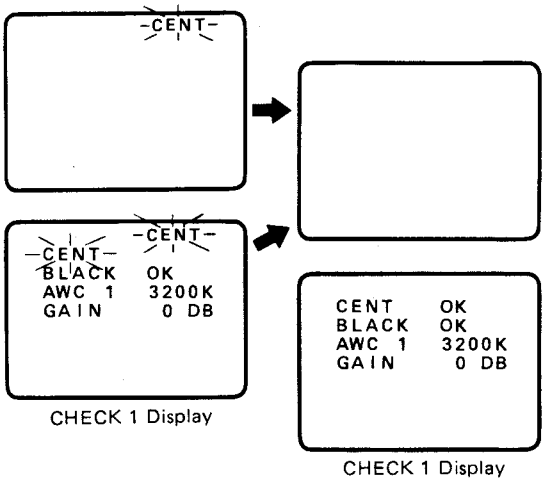


CHECK 1 Display

CHECK 1 Display



13) Set the centering as follows.
While aiming the camera at the registration chart or normal scene/object such as human, dolls or flowers etc., press down the Auto Centering Set Switch (17) momentarily to activate the automatic centering setting. The horizontal and vertical centering of red and blue picture are automatically adjusted to match the green picture in maximum 5 seconds. The CENT is blinking in the viewfinder while the centering is being set. The CENT disappears and the CENT OK is displayed in the CHECK operation when the centering setting is completed.
If the blinking CENT remains even after repeating the automatic centering setting, reset the centering while referring to AUTO CENTERING SETTING on page 40.

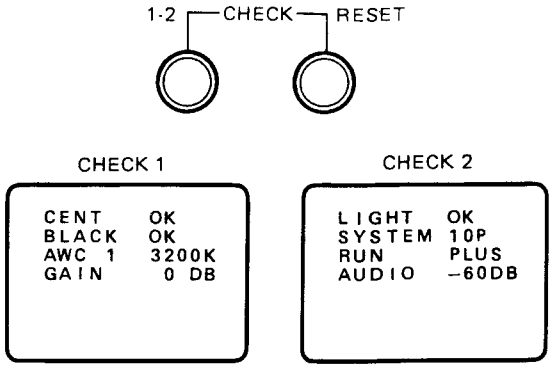


CHECK 1 Display

CHECK 1 Display

14) Confirm the flangeback adjustment of the lens as follows.
- o Aim the camera at an object further than 2m (6 feet) from the camera.
- o Zoom in (close-up/telephoto) with the Power Servo Zoom Control (4) and adjust the lens focus with the Focus Ring (24).
- o Zoom out (wide angle) and confirm that the picture is in focus. If not, adjust the flangeback of the lens by referring to LENS FLANGEBACK ADJUSTMENT on page 41.

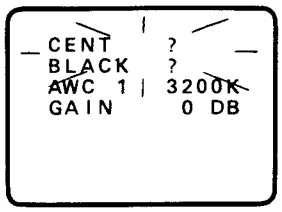
15) Reconfirm the condition of camera by depressing the CHECK 1-2 Button (31). Press the Reset Button for the normal picture.
Refer for details to 3. CHECK DISPLAY on page 44.



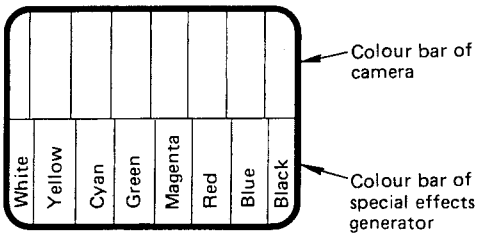
16) Adjust the zoom lens with the Power Servo Zoom Control (4) or Zoom Ring/Lever (25) to have the desired picture composition.
Turn the Focus Ring (24) to get the best focus by watching the picture in the viewfinder.
For macro function : Turn the Zoom Ring/Lever to macro range while depressing the Macro Knob for close-up picture as close as 5cm (2").

3. Gen-Lock EFP with RCU Application (Studio Application)

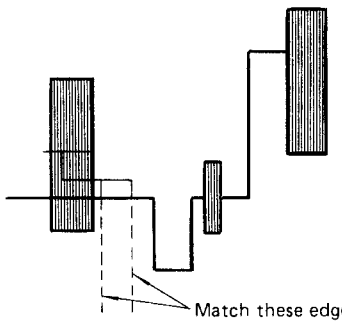
1) Make all the required connections and make sure that the Gen-Lock Input Termination Switch (102) and the Auxiliary Input Termination Switch (104) are properly set.
2) Set the Standby/Operate Selection switch (28) on the camera to the OPERATE position.
3) Set the Power Switch (53) on the camera to the VTR/RCU position.
When the power switch is turned ON, the following display appears. It disappears when the automatic black balance, white balance or centering is set or the CHECK RESET Button is pressed.



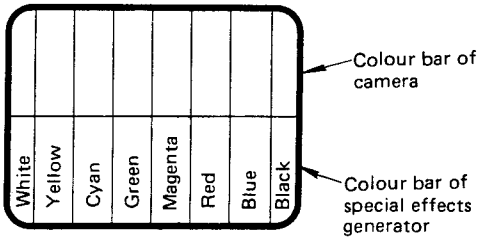
4) Set the Cable Length Compensation Switch (97) on the RCU according to the length of cable used.
Note : Standard cable length is 10m (30ft).
5) Set the Colour Bar/Camera Selection Switch (82) on the RCU to the BAR position.
6) Adjust the horizontal phase of camera as follows.
o Set the switches and controls on the special effects generator so that the split picture of colour bars is observed on the programme output monitor.
Refer for the details to the operating instructions of the special effects generator.



o Connect the oscilloscope to the PROGRAMME OUTPUT connector of special effects generator and or feed the PROGRAMME OUTPUT signal to the waveform monitor. Observe the horizontal blanking period of the PROGRAMME OUTPUT signal.
o Adjust the Horizontal (H) Phase Control (94) on the RCU so that the phase of horizontal blanking of the colour bar signal for the camera matches that for the special effects generator.



o The horizontal phase of the camera can be roughly adjusted by observing the split picture on the programme output monitor after selecting switches and controls as mentioned previously. Adjust the Horizontal (H) Phase Control (94) on the RCU so that the edges of colour bar for the camera and special effects generator roughly match each other.



Note : The horizontal phase should be re-adjusted as well as the subcarrier phase, the total gain and the chroma gain explained next if the connection or length of coaxial or studio cable is changed in the system.

7) Adjust the subcarrier phase of camera as follows.
o Set the switches and controls on the special effects generator so that the split picture of colour bar is observed on the programme output monitor.
Refer for the details to the operating instructions of the special effects generator.
o Adjust the Subcarrier (SC) Phase Coarse Switch (96) and Fine Control (95) on the RCU so that the colour of the colour bar for the camera is maximum and is similar to that for special effects generator.
o Precise adjustment should be done by using the vectorscope. Supply the PROGRAMME OUTPUT signal to the vectorscope from the special effects generator. While observing the vectorscope, adjust the Subcarrier Coarse Switch (96) and Fine Control (95) so that the phase of colour bar of camera matches that of special effects generator on the vectorscope.
8) Set the Colour Bar/Camera Selection Switch (82) on the RCU to the CAMERA position.
9) Set the High Gain Selection Switch (81) on the RCU to the 0dB position. If the object/scene condition is darker and light intensity is insufficient, it is recommended to set the switch to the +6dB or +12dB position.
10) Select the proper filter according to colour temperature using the Filter Wheel (35) on the camera according to the table on page 40.
Note : 1. If the camera is operated in the auto tracing white-balance (ATW) mode

by setting the White Balance Selection Switch (86) on the RCU to ATW position, the Filter Wheel must be set to No. 1 position.

2. The filter position is displayed in the viewfinder and is provided at the Video Output 2/CHECK Connector (107) on the RCU in the CHECK operation.

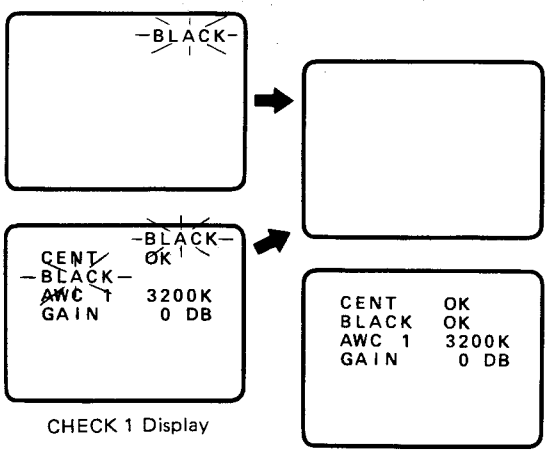
11) Set the Iris Selection/Manual Control Knob (23) on the zoom lens and the Iris Control (100) on the RCU to the AUTO position.

12) Set the black balance as follows.

(a) Automatic black balance setting :

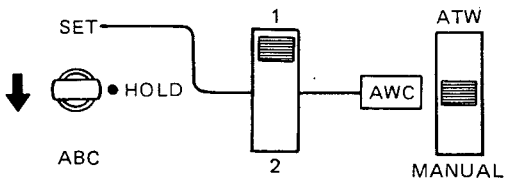
Set the Auto White/Auto Black Set Switch (84) on the RCU to the ABC position momentarily by pressing it down. The lens iris is automatically closed blocking the incoming light and the black balance is set automatically in approximately 6 seconds. After completing the black balance setting, the lens iris is automatically returned to the previous position. The BLACK in the viewfinder is blinking while the black balance is being set and it goes off when the black balance is completed and the BLACK OK is displayed in the CHECK OPERATION. If the blinking BLACK remains, reset the black balance.

Refer to BLACK BALANCE SETTING on page 37 for the details.



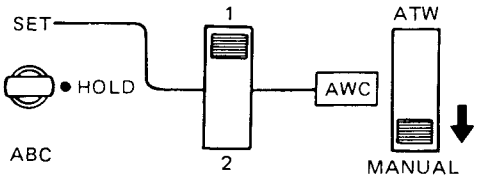
CHECK 1 Display

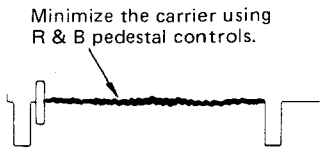
CHECK 1 Display



(b) Manual black balance setting :

If the manual black balance setting is desired, adjust the Red Pedestal (92) and Blue Pedestal (93) controls after setting the White Balance Selection Switch (86) to the MANUAL position, and closing the lens iris by setting the Filter Wheel (35) to No. 4 or capping the lens. Adjust the controls so that the carrier on the video output signal is minimum.





The total pedestal level can be adjusted by turning the Total Pedestal Control (91). The pedestal level should be set to 0V.

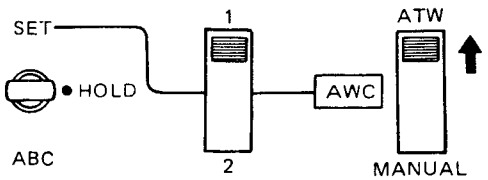
13) Set the white balance by the following instructions.

a. Automatic tracing white-balance (ATW) operation:

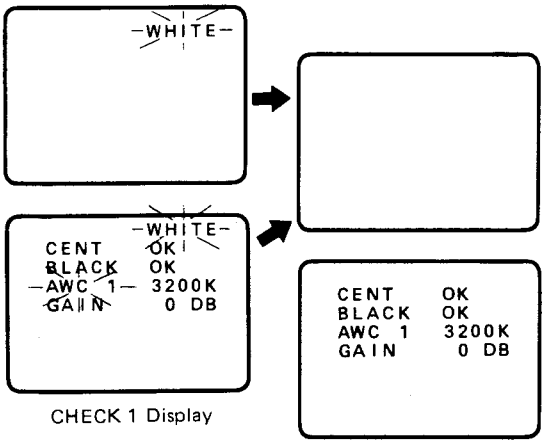
Set the White Balance Selection Switch (86) on the RCU to the ATW position and the Filter Wheel (35) to position 1.

The white balance is automatically set by detecting the characteristic/colour temperature of light which illuminates the scene.

It is recommended to use ATW position if quick setting up is required or the characteristic/color temperature of light would vary during shooting.

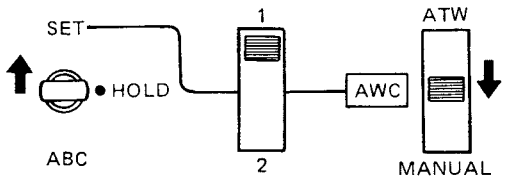


b. Automatic white balance setting :
Set the White Balance Selection Switch (86) to the AWC position and the AWC Selection Switch (85) to AWC 1 or 2.
While aiming the camera at the white object such as white paper, set the Auto White/Auto Black Set Switch (84) to the AWC position momentarily by pressing it up. The white balance is automatically set. When the white balance is completed, the blinking WHITE disappears and/or the AWC 1 or AWC 2 stops blinking in the viewfinder and on the picture at the Video Output 2/CHECK Connector (107). If the blinking WHITE and/or AWC 1 or AWC 2 remain, reset the white balance after confirming the position of Filter Wheel (35) by referring to the table on page 40.
Refer to WHITE BALANCE SETTING on page 38 for the details.

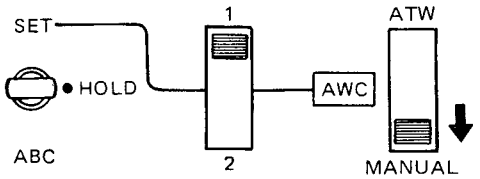


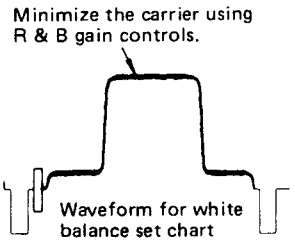
CHECK 1 Display

CHECK 1 Display

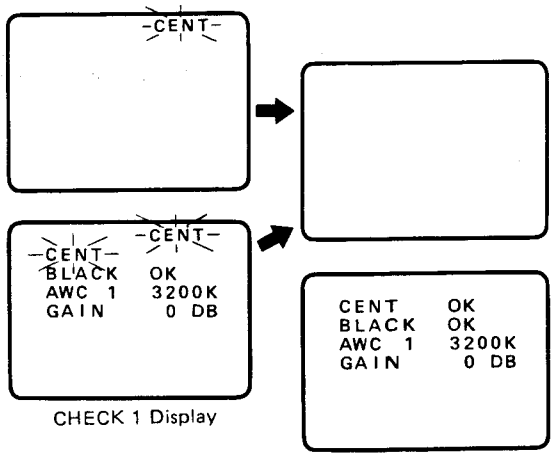


c. Manual white balance setting :
If the manual white balance setting is desired, adjust the Red Gain Control (89) and Blue Gain Control (90) after setting the White Balance Selection Switch (86) to the MANUAL position so that the carrier on the video output signal is minimum.



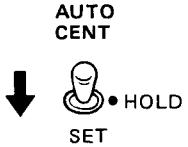


14) Set the centering as follows.
While aiming the camera at the registration chart or normal scene/object such as human, dolls or flowers etc., press down the Auto Centering Set Switch (83) momentarily to activate the automatic centering setting. The horizontal and vertical centering of red and blue picture are automatically adjusted to match the green picture in maximum 5 seconds. The CENT is blinking in the viewfinder while the centering is being set. The CENT disappears and the CENT OK is displayed in the CHECK operation when the centering setting is completed.
If the blinking CENT remains even after repeating the automatic centering setting, reset the centering while referring to AUTO CENTERING SETTING on page 40.

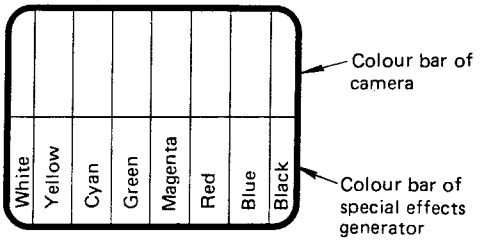


CHECK 1 Display

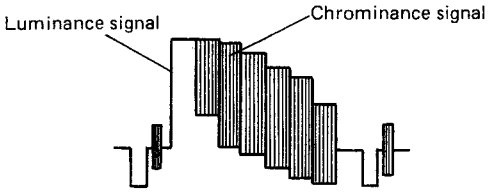
CHECK 1 Display



15) Fine-adjust the total gain and chroma gain as follows.
   - o Set the switches and controls on the special effects generator so that the split picture of colour bars is observed on the programme output monitor. Refer for the details to the operating instructions of the special effects generator.

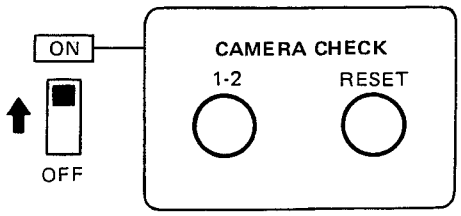


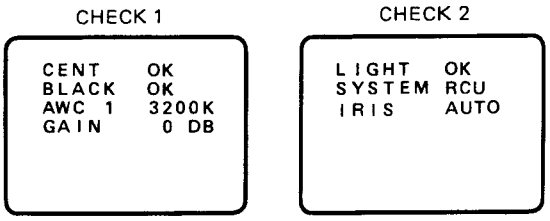
   - o Connect the oscilloscope to the PROGRAMME OUTPUT connector of special effects generator or feed the PROGRAMME OUTPUT signal to the waveform monitor.
     Observe the horizontal blanking period of the PROGRAMME OUTPUT signal.
   - o Adjust the Total Gain Fine Control (98) so that the luminance signal level of colour bar signals are equal. Adjust the Chroma Gain Fine Control (99) so that the chrominance signal level of colour bar signals are equal.



16) Confirm the flangeback adjustment of the lens as follows.
   - o Aim the camera at an object further than 2m (6 feet) from the camera.
   - o Zoom in (close-up/telephoto) with the Power Servo Zoom Control (4) and adjust the lens focus with the Focus Ring (24).
   - o Zoom out (wide angle) and confirm that the picture is in focus. If not, adjust the flangeback of the lens by referring to LENS FLANGEBACK ADJUSTMENT on page 41.

17) Reconfirm the condition of camera by setting the CHECK ON/OFF Switch (87) to the ON position and depressing the CHECK Button (88). Press the Reset Button for the normal picture.
   Refer for details to 3. CHECK DISPLAY on page 44.



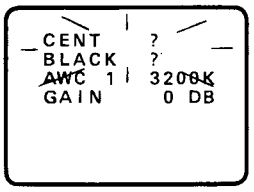


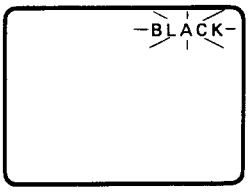
18) Adjust the zoom lens with the Power Servo Zoom Control (4) or Zoom Ring/Lever (25) to have the desired picture composition.
19) Turn the Focus Ring (24) to get the best focus by watching the picture in the viewfinder.
   For macro function : Turn the Zoom Ring/Lever to macro range while depressing the Macro Knob for close-up picture as close as 5cm (2").

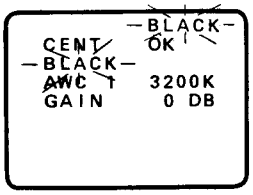
BLACK BALANCE SETTING

1. Black Balance

The black balance setting is necessary to produce the correct colour at the low illuminated scene.
Set the black balance when the following blinking indication is displayed in the viewfinder or on the CHECK monitor connected to the Video Output 2/CHECK Connector (107) on the RCU (studio application).

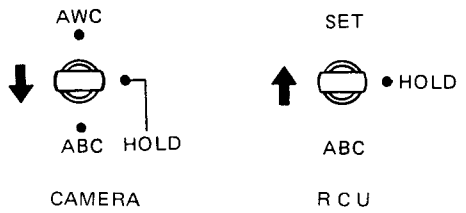


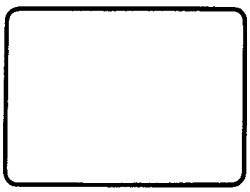


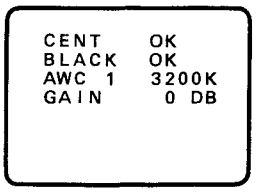


2. Auto Black Balance Setting

- o Set the Iris Selection/Manual Control Knob (23) on the zoom lens and the Iris Control (100) on the RCU to the AUTO position.
  Note : If the black balance must to be set in the manual iris control mode, the incoming light should be blocked by setting the Filter Wheel (35) to No. 4 (CLOSE) or capping the lens.
- o Set the Auto White/Auto Black Set Switch (14) on the camera or (84) on the RCU (studio application) to the ABC position momentarily by pressing it down. The lens iris is automatically closed blocking the incoming light and the black balance is set automatically in approximately 6 seconds. After completing the black balance setting, the lens iris is automatically returned to the previous position. The BLACK in the viewfinder or on the CHECK monitor is blinking while the black balance is being set. The BLACK goes off or the BLACK OK is displayed in the CHECK operation when the black balance setting is completed. If the blinking BLACK remains, reset the black balance.



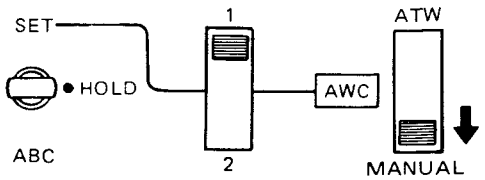




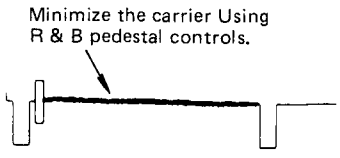
Note : 1. Since the black balance at the +0 dB and +12 dB mode of high gain selection switch is set alternately by selecting the +0 dB and +12 dB position automatically, the picture on the viewfinder and the video monitor flashes while the black balance is being set.
2. The black balance is held for a long period of time by the internal backup battery as well as the white balance and centering even if the camera is switched OFF. However it is recommended to reset the black balance if the camera is not in use for a long period of time.

3. Manual Black Balance Setting (Studio Application)

- o The manual black balance setting is possible by adjusting the Red Pedestal (92) and Blue Pedestal (93) control on the RCU.
- o Set the White Balance Selection Switch (86) on the RCU to the MANUAL position and close the lens iris by setting the Filter Wheel (35) to No. 4 or capping the lens.



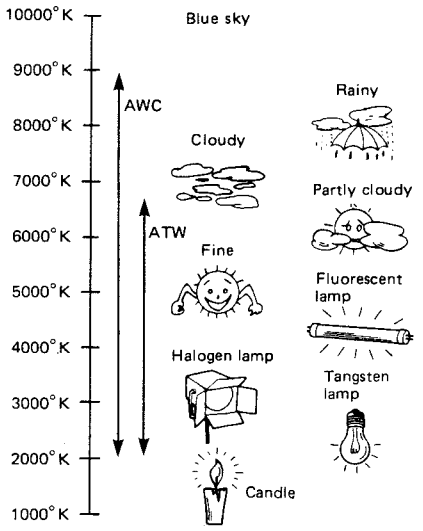
- o Observe the signal waveform of video output signal with the oscilloscope or the waveform monitor.
- o Adjust the Red Pedestal (92) and Blue Pedestal (93) control on the RCU so that the carrier on the video output signal is minimum.



WHITE BALANCE SETTING

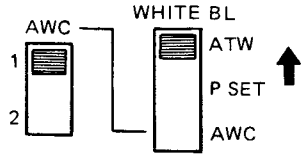
1. White Balance

- o The nature of the light is called colour temperature and it is measured by unit Kelvin (°K). The higher colour temperature is considered bluish and the lower colour temperature is considered reddish. When the camera is aimed at an object illuminated by a light of high colour temperature, it reproduces a bluish picture. When the camera is pointed at an object illuminated by a light of low colour temperature, it reproduces a reddish picture.
- o To produce the accurate colour reproduction, the white balance of the camera should be set before shooting.



2. Automatic Tracing White-balance (ATW) operation

- o Set the White Balance Selection Switch (32) on the camera or (86) on the RCU (studio application) to the ATW position and the Filter Wheel (35) on the camera to position 1.
  The white balance is automatically set by detecting the characteristic/colour temperature of light with the front mounted ATW sensor.
  Colour temperature range in which the ATW operation is possible : Approximately 2000°K – 6500°K
  In the ATW operation, if the camera is used beyond this range, the blinking WHITE or/and ATW is displayed. In this case, use the automatic white balance (AWC) setting.
- o It is recommended to use ATW position if the quick setting up is required and the colour temperature of light would vary frequently during shooting.

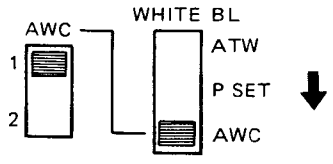


- o In the following conditions, the ATW operation may not produce optimum white balance. In such cases, use the Automatic White Balance Setting explained next.
  - o When the illumination of the object is different from the light which falls on the camera.
  - o When the camera or the object is in the shade.
  - o When special type of bright light sources such as mercury-vapor lamps or natrium lamps are used.
  - o When the illumination is not bright enough.
  - o When the scene has strong coloured illumination, for example during sunrise and sunset, blue sky, green fields etc.
  - o When some other light source which is outside the sensing range of the ATW.
  - o When there is some object placed in front of the ATW sensor that interferes light reaching to the sensor.
  - o When shooting in the macro range of the lens.

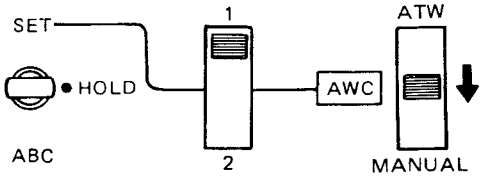
3. Automatic White Balance Setting

- o The accurate white balance for two different light sources such as indoor and outdoor can be set automatically in the automatic white balance setting (AWC) mode as follows.
  Colour temperature range in which the AWC operation is possible : Approximately 2000°K – 9000°K with Filter Wheel.
- o Select the proper filter according to the colour temperature of light source using the Filter Wheel (35) on the camera by referring to the table on page 40.
- o Set the White Balance Selection Switch (32) on the camera or (86) on the RCU to the AWC position and the AWC Selection Switch (33) on the camera or (85) on the RCU to the AWC 1 or 2.

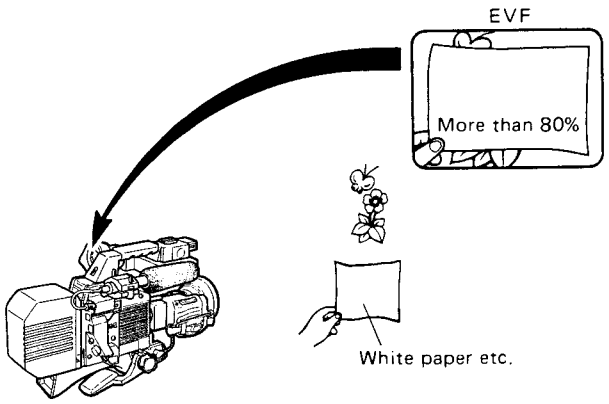
Camera/ENG application



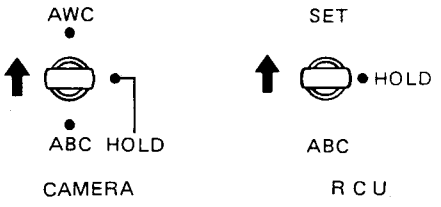
RCU/Studio application

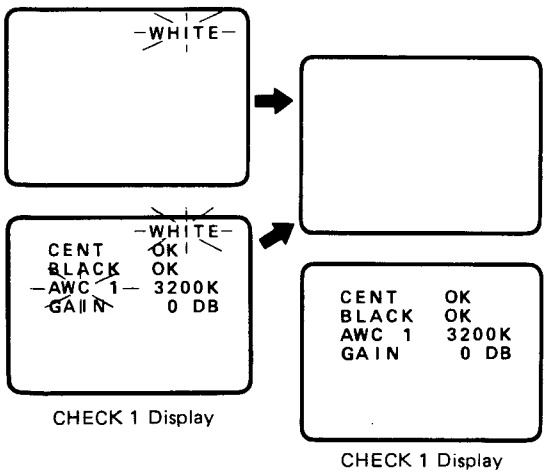


- o Aim the camera at a white object such as white wall or white paper etc. and adjust zoom lens so that the white object occupies more than 80% of picture size.

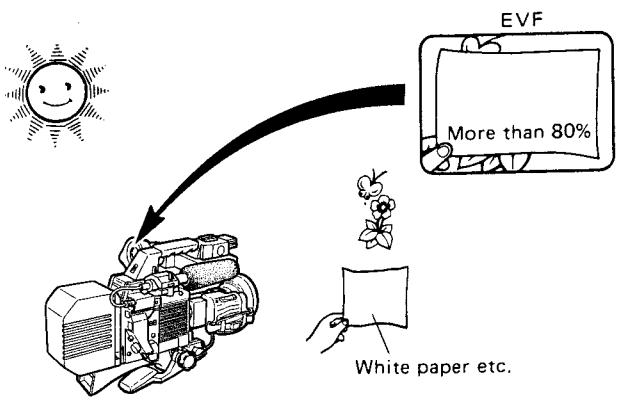


o Set the Auto White/Auto Black Set Switch (14) on the camera or (84) on the RCU (studio application) to the AWC position momentarily by pressing it up.
The white balance is automatically set. When the white balance setting is completed, the blinking WHITE and/or AWC 1 or AWC 2 disappear from the viewfinder and on the CHECK monitor. If the blinking WHITE remains, reset the white balance after confirming the position of the Filter Wheel (35).

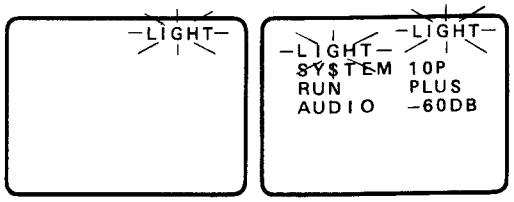




Note : 1. In case the pictures are taken under sunlight, the white balance setting is to be performed with a white surface exposed to sunlight to avoid the colour distortion and if the pictures are taken in the shade, the white balance should be effected in the shade.



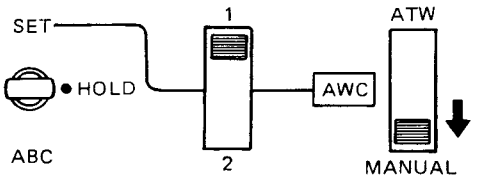
2. The white balance may not be properly balanced under low illuminations when the blinking LIGHT is displayed in the viewfinder.

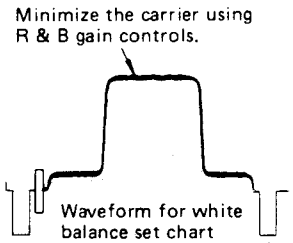


3. Whenever the blinking WHITE is displayed in the viewfinder during camera operation, the white balance should again be reset.
4. Whenever the Filter Wheel (35) is reset, the white balance should also be reset.
5. It is recommended that the white balance should be set after a few minutes warm-up.
6. The white balance is held for a long period of time by the internal backup battery as well as the black balance and centering even if the camera is switched OFF.
Therefore, if the lighting condition of the scene is exactly same as previous setting, it is unnecessary to reset the white balance. However if the lighting condition is different from the previous condition, it should be reset.
7. If the camera is not in use for a long period of time, it is recommended to set the white balance prior to recording.
8. The white balance for two different light sources (AWC 1 and AWC 2) should be set at the same position of the Filter Wheel (35).

4. Manual White Balance Setting (Studio Application)

- o If the manual white balance setting is desired, it can be adjusted from the RCU.
- o Select the proper filter according to the color temperature of light source using the Filter Wheel (35) on the camera by referring to the table on page 40.
- o Set the White Balance Selection Switch (86) on the RCU to the MANUAL position.
- o Aim the camera at a white object such as white paper etc.
- o Observe the signal waveform of video output signal with the oscilloscope or the waveform monitor.
- o Adjust the Red Gain Control (89) and Blue Gain Control (90) so that the carrier on the video output signal is minimum.





5. Filter Wheel Setting

- o Select the filter according to the light source used.

	Object/Scene & Light Source Condition	Colour Temperature	Wheel No.
INDOOR	Halogen Lamp or Tungsten Lamp (Studio)	3200°K	1
INDOOR	Fluorescent Lamp (White)	4500°K	3
INDOOR	Fluorescent Lamp (Daylight)	6500°K	3
OUTDOOR	Daylight (Very Fine)	4500°K	2
OUTDOOR	Daylight (Fine-Partly Cloudy)	5000° – 6000°K	2
OUTDOOR	Cloudy	7000° – 7500°K	3

Note : When the camera is used in the ATW mode by setting the White Balance Selection Switch (32) on the camera (86) on the RCU to the ATW position, the filter wheel should be set to No. 1 position.

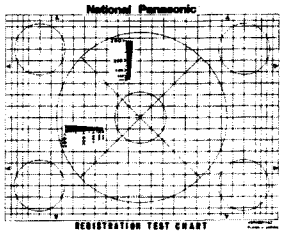
AUTO CENTERING SETTING

1. Auto Centering

- o The camera has 3-pickup tubes which produces the red, green and blue images. To produce correct colour, these images should coincide each other. The auto centering adjusts the horizontal and vertical centering of red and blue images automatically to match the green image.

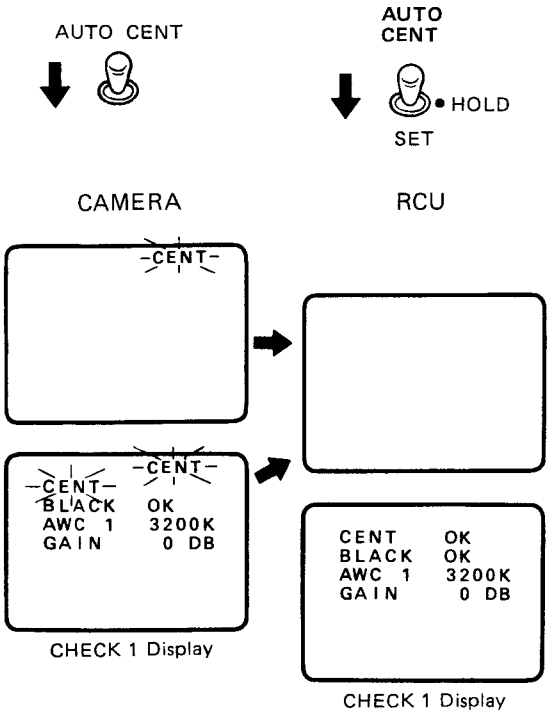
2. Auto Centering Setting

- o Aim the camera at the registration chart or normal scene/object such as human, dolls or flowers.



Note : 1. The lens focus should be adjusted precisely prior to the automatic centering setting.
2. Do not move the camera and do not aim the camera at moving object during automatic centering setting.
3. The following objects are not recommended to set the automatic centering.
   - o Window chart
   - o Single colour object
   - o Object which has less contrast
   - o Object which has no white or less white
   - o Coarse pattern object
4. When setting the automatic centering while aiming the camera at the normal scene/object such as human, dolls, flowers etc., it is recommended to set the zoom lens to the wide angle position.

- o Set the Auto Centering Set Switch (17) on the camera or (83) on the RCU (studio application) to the SET position momentarily by pressing it down to activate the automatic centering adjustment. The horizontal and vertical centering of red and blue picture are automatically adjusted to match the green picture in maximum 5 seconds. The warning indicator CENT is blinking in the viewfinder and on the CHECK monitor (connected to the Video Output 2/CHECK connector on the RCU) while the centering is being set. The CENT disappears when the centering setting is completed and the CENT OK is displayed in the CHECK operation. If the CENT remains, reset the auto centering setting while referring "Note" above.

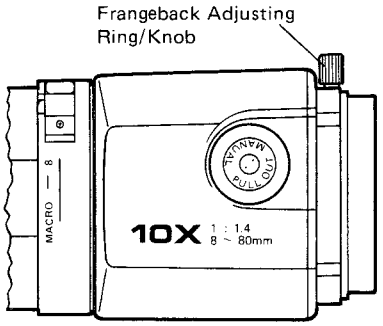


Note : The centering is held for a long period of time by the internal backup battery even after the power switch is turned OFF as well as the automatic black and white balance. However, it is recommended to reset the centering prior to the recording.

LENS FLANGEBACK ADJUSTMENT

If the flangeback is not adjusted correctly, the focus is not maintained throughout zoom range.

- o Aim the camera at an object further than 2m (6 feet) from the camera and loosen the Flangeback Adjusting Ring/Knob (22).
- o Zoom in (close-up/telephoto) with the Power Servo Zoom Control (4) and adjust the lens focus with the Focus Ring (24).
- o Zoom out (wide angle) and adjust the focus by turning the Flangeback Adjusting Ring/Knob (22).



- o Zoom in again and adjust the focus by turning the focus ring.
- o Zoom out again and adjust the focus by turning the Flangeback Adjusting Ring/Knob.
- o Repeat proceeding steps until the focus is maintained throughout the zoom range. After completing the flangeback adjustment, tighten the Flangeback Adjusting Ring/Knob.

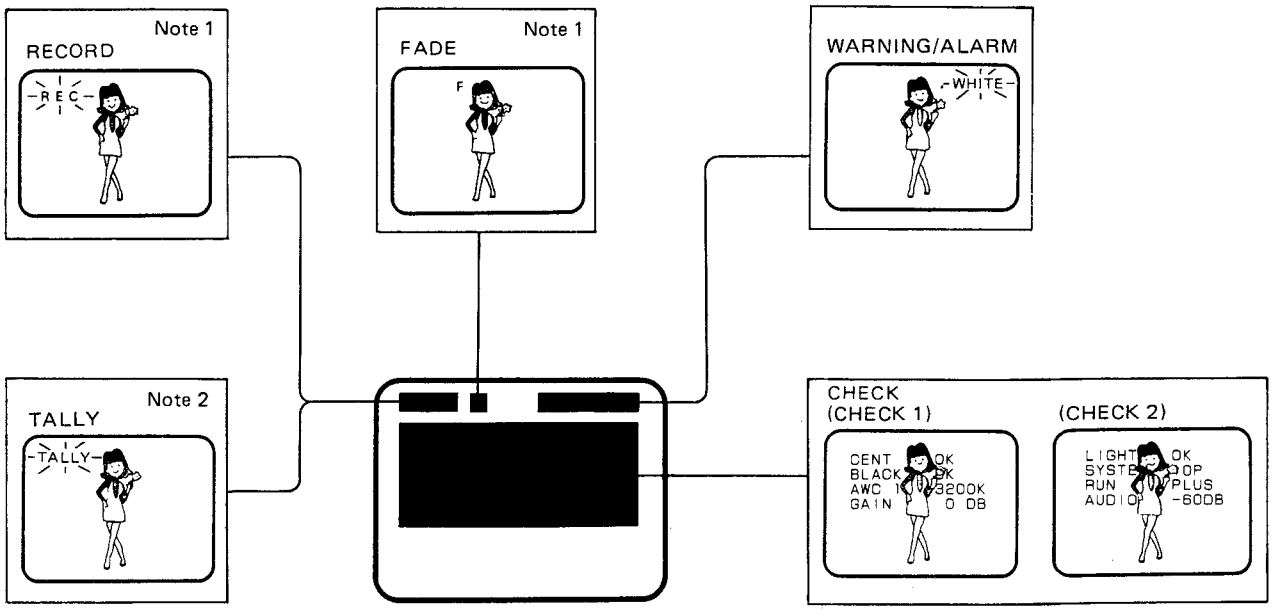
Note : If the flangeback of zoom lens is adjusted once, it is unnecessary to readjust it unless the zoom lens is replaced.

CHARACTER DISPLAY

The following functional display of the camera appears in the viewfinder and on the CHECK monitor connected to the Video Output 2/CHECK connector (studio application) to show the operator the camera's conditions as follows;

Note : 1. These displays are not recorded.
2. These displays do not appear while the playback picture is seen on the viewfinder.

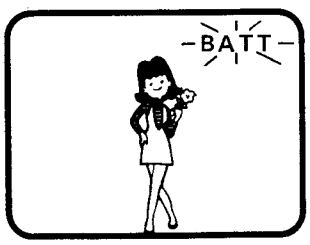
o FUNCTIONAL/WARNING DISPLAY



Note : 1. The REC and F are displayed in the ENG application.
2. The TALLY is displayed in the studio application using the RCU and special effects generator.

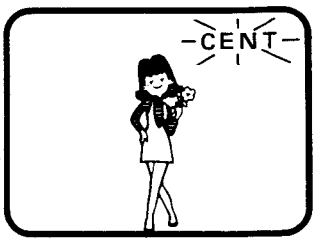
1. WARNING/ALARM DISPLAY

(1) BATT :
When the power supplied to the camera from the battery pack becomes low level, the blinking BATT is displayed.



Replace or recharge the battery and confirm that the blinking BATT disappears.

(2) CENT :
When the centering of the camera is set improperly, the blinking CENT is displayed.

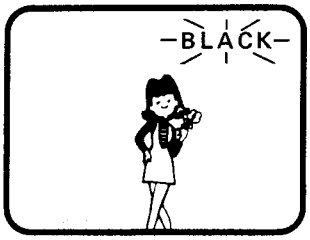


Set the Auto Centering Set Switch to the SET position by pressing it down momentarily while aiming the camera at the registration chart or the normal scene/object and confirm that the blinking CENT disappears.

(3) BLACK :

When the black level is unbalanced, the blinking BLACK is displayed.

Set the Auto White/Auto Black Set Switch to the ABC position by pressing it down after setting the lens iris to the automatic mode and confirm that the blinking BLACK disappears.



(4) WHITE :

When the white level is unbalanced, the blinking WHITE is displayed.

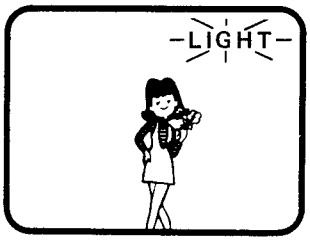
Set the Auto White/Auto Black Set Switch to the AWC position by pressing it up while aiming the camera at the white object such as wall or paper and confirm that the blinking WHITE disappears.

In the ATW operation, if the camera is used beyond the ATW operating range (approximately 2000°K – 6500°K), the blinking WHITE appears. In this case, use the camera in the automatic white balance (AWC) setting mode.

(5) LIGHT :

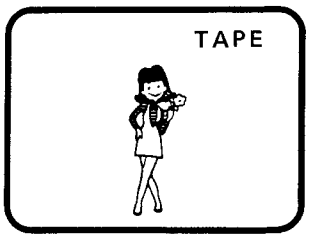
When the light level becomes insufficient, the blinking LIGHT is displayed.

Additional lighting is required.

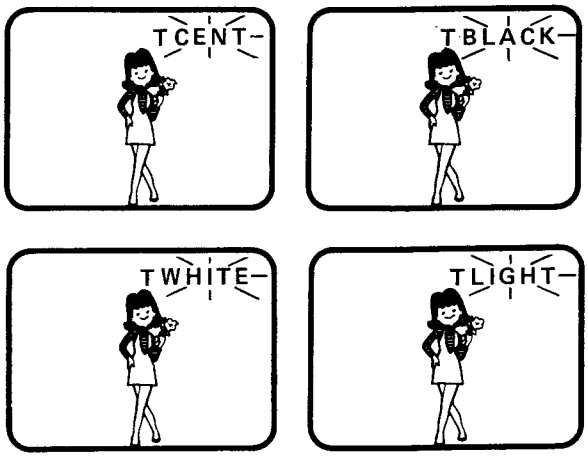


(6) TAPE :

When the amount of video tape to be recorded becomes less than 5 minutes, the TAPE is displayed in the viewfinder.



If the amount of video tape becomes less than 5 minutes while the blinking CENT, BLACK, WHITE or LIGHT is being displayed, the letter T is displayed in addition to the blinking warning.



Note : The TAPE or T is displayed only when the camera is used with the Panasonic portable VTR (such as NV-180).

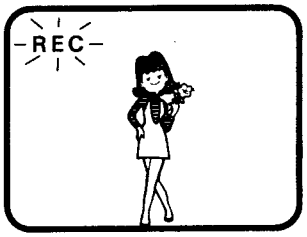
Note : The priority order for the warning/alarm graphics is BATT ⟶ CENT ⟶ BLACK ⟶ WHITE ⟶ LIGHT ⟶ TAPE.

The lower priority warning/alarm will function after resolving the higher priority warning/alarm.

2. FUNCTIONAL DISPLAY

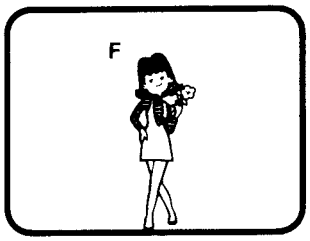
(1) Recording Display

When the VTR Start/Stop Button on the camera or the lens is pressed, the blinking REC is displayed for indicating recording mode.



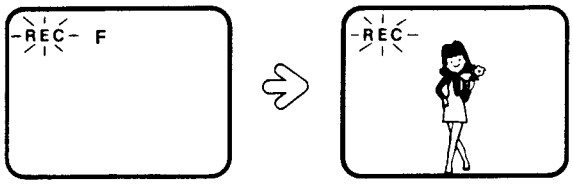
(2) Fade-in/out Operation Display

When the Fade Button is pressed for the fade-in/out operation, the letter F is displayed.



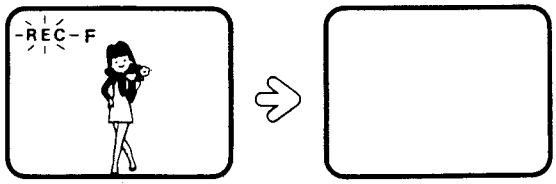
(a) Fade-in Operation

When the VTR Start/Stop Button on the camera or the lens is pressed after the Fade Button is pressed, the blinking REC and F are displayed for fade-in operation. When the fade-in operation is completed, the letter F disappears.



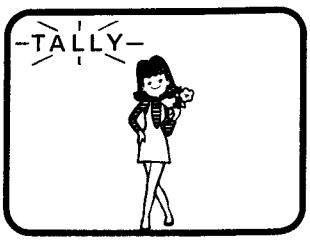
(b) Fade-out Operation

When the Fade Button is pressed during recording, the blinking REC and F are displayed for ready of fade-out operation. Then, press the VTR Start/Stop Button for fade-out operation and the blinking REC and F disappear when the fade-out operation is completed.



(3) Tally Display

When the camera is used in the studio application using the RCU and the special effects generator and the picture of camera is selected to the programme output, the blinking TALLY is displayed.



3. CHECK DISPLAY

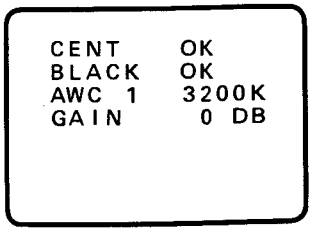
The camera's setting conditions can be displayed in the viewfinder or the CHECK output on the RCU by pressing CHECK button on the camera or RCU.

(1) CHECK Display in ENG Application

When the CHECK 1-2 Button on the camera is pressed, the following CHECK 1 or 2 display appears.

The CHECK display disappears when the RESET button is pressed.

CHECK 1



1 1st row

If the centering of the camera is set improperly, the blinking CENT is displayed.

2 2nd row

If the black level is unbalanced, the blinking BLACK is displayed.

3 3rd row

The ATW, PRESET, AWC 1 or AWC 2 is displayed according to the position of the White Balance Selection Switch and AWC Selection Switch. The position of Filter Wheel is displayed as follows;

Position of Filter Wheel	Display
(1) 3200°K	3200K
(2) 5600°K + 12.5% ND	56 ND
(3) 5600°K	5600K
(4) CLOSE	CLOSE

If the white balance is set improperly, the AWC 1 or AWC 2 blinks.

In the ATW operation, if the camera is used beyond the ATW operating range (approximately 2000°K – 6500°K), the ATW display blinks.

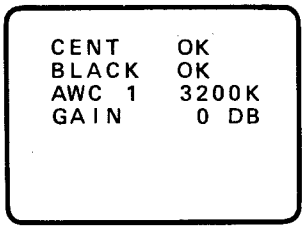
4 4th row
The gain display is changed to 6 DB or 12 DB according to the selection of the High Gain Selection Switch.

CHECK 2

1 1st row
If the light level is insufficient, the blinking LIGHT is displayed.
2 2nd row
The 10P or 14P is displayed according to the selection of the VTR Selection Switch.
3 3rd row
The PLUS or MINUS is displayed according to the selection of the VTR Compatibility Switch.
4 4th row
The −60DB or −20DB is displayed according to the selection of the Audio Level Selection Switch.

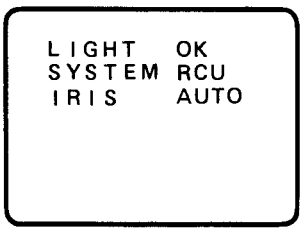
(2) CHECK Display in Studio Application with RCU
When the CHECK 1 - 2 Button on the RCU is pressed after setting the CHECK ON/OFF Switch, the following CHECK 1 or 2 display appears. The CHECK display disappears when the RESET Button is pressed.

CHECK 1



The CHECK 1 display in studio application with the RCU is same as that in the ENG application. Refer to (1) CHECK Display in ENG Application on page 44.

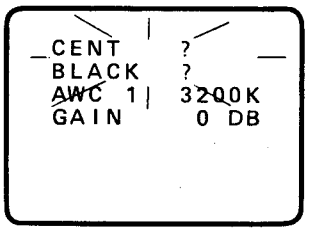
CHECK 2



1 1st row
If the light level is insufficient, the blinking LIGHT is displayed.
2 2nd row
The RCU is displayed.
3 3rd row
The AUTO or MANU is displayed according to the operation of Lens Iris Control on the RCU.

Note : If the video output signal is fed to the VTR or line output monitor from the Video Output 2/CHECK Connector on the RCU, the CHECK ON/OFF switch on the RCU should be set to the OFF position during the programming to avoid misoperation of CHECK Button.

(3) Initial CHECK Display
When the power switch is turned ON, the following display appears. It disappears when the automatic black balance, white balance or centering is set or the CHECK RESET Button is pressed.



FADE IN/OUT OPERATION

When the movie or TV programme is seen, the picture gradually appears at the beginning of the scene (FADE IN effect) and gradually disappears at the end of the scene (FADE OUT effect).

When the FADE IN/OUT effect is desired, press the VTR Start/Stop Button (16) or (45) on the camera or the lens after depressing the Fade Button (15).

The FADE IN/OUT effect will be accomplish once. If another FADE IN/OUT effect is desired, the Fade Button should be pressed again.

This prevents the FADE IN/OUT performance at undesired portion by misoperation.

The audio sound FADE IN/OUT effect is simultaneously performed with the picture fade in/out.

FADE IN Effect

1. Press the Fade Button (15) while VTR is in Record/Pause mode.
   The letter F is displayed in the viewfinder.
2. Press the VTR Start/Stop Button (16) or (45) for VTR recording.
3. The picture in the viewfinder gradually disappears once, then the picture gradually appears again (fade in).
   The audio sound is also simultaneously performed with the picture fade in.
   When the picture in the viewfinder disappears, the blinking REC is displayed and the VTR starts to record.
   The letter F disappears when the fade in effect is completed.

FADE OUT Effect

1. Press the Fade Button (15) while VTR is recording.
   The letter F is displayed in the viewfinder.
2. Press the VTR Start/Stop Button (16) or (45) for ending VTR record.
3. The picture in the recording gradually disappears (fade out) as the picture in the viewfinder also gradually disappears. When the picture in the viewfinder disappears, VTR ends the recording and stops, and the picture again appears automatically for the next fade in effect.
   The audio sound is also simultaneously performed with the picture fade out. When the fade out effect is completed, the blinking REC and letter F disappear.

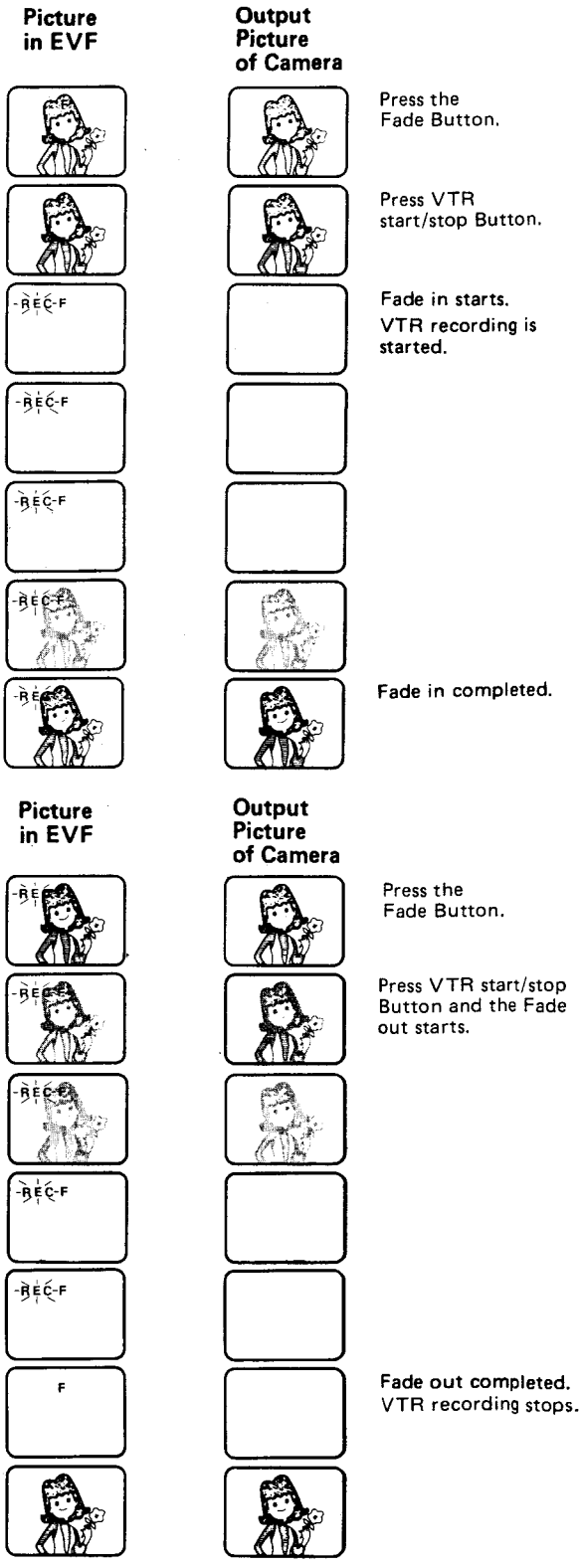
Fade Colour Selection Switch

The colour which the picture fades in from or fades out to can be selected to white, black or one of seven colours (when used with character generator WV-KB12E) by setting the Fade Colour Selection Switch on the camera.

Note : (1) VTR Start/Stop Button is disabled during the fade in/out effect.
This prevents abrupt picture change during the fade in/out effect by misoperation of the VTR Start/Stop Button.

(2) If the Fade Button is pressed again before pressing the VTR Start/Stop Button, the fade condition is defeated.

(3) The fade function is inoperable when the RCU is used.


Picture in EVF
Output Picture of Camera
Press the Fade Button.
Press VTR start/stop Button.
Fade in starts. VTR recording is started.
Fade in completed.
Picture in EVF
Output Picture of Camera
Press the Fade Button.
Press VTR start/stop Button and the Fade out starts.
Fade out completed. VTR recording stops.

SPECIFICATIONS

ENG Colour Camera WV-V3E

Pick-up System :	Middle index prism system using three Newvicon® tubes
Pick-up Tube :	Three 1/2" electrostatic focusing, magnetic deflection Newvicon® tube, type S4701A
Scanning Standard :	625 lines, 50 fields, 25 frames
Synchronizing System :	Internal or External (gen-lock) with RCU/gen-lock adaptor switchable automatically Internal : PAL standard External (gen-lock) Input : PAL composite signal or black burst signal through RCU/gen-lock adaptor
Subcarrier Phase for Gen-Lock :	Adjustable more than 360° at RCU/gen-lock adaptor
Horizontal Phase for Gen-Lock :	Adjustable from -0.1 μsec to +3.5 μsec at RCU/gen-lock adaptor
Video Output :	Three outputs 1.0Vp-p PAL composite/75 ohms x 1 (BNC connector) 1.0Vp-p PAL composite/75 ohms x 1 (14-pin VTR connector) 1.0Vp-p PAL composite/75 ohms x 1 (32-pin junction connector for RCU/gen-lock adaptor
Auxiliary Input :	1.0Vp-p composite/75 ohms through RCU/gen-lock adaptor
Audio Input :	Internal Mic Input : -70 dBm x 1 (M3 connector) External Mic Input : -70 dBm unbalance x 1 (M6 connector)
Audio Output :	-20 dBm or -60 dBm switchable (14-pin VTR connector)
Illumination Required :	1400 lux at F4.0
Minimum Illumination :	30 lux at F1.4 with +12 dB gain
Signal-to-Noise Ratio (Nominal) :	–52 dB (luminance) at 1400 lux, F4 without gamma and aperture correction
Horizontal Resolution (at center) :	570 lines
Geometric Distortion :	Less than 2%
Sweep Linearity :	Less than 2%
Registration :	Less than 0.1% within circle having a diameter 80% of picture height Less than 0.3% within circle having a diameter of picture height Less than 0.6% elsewhere
Vertical Enhancer :	2-line type
White Balance :	Automatic tracing white-balance (ATW), automatic white setting (AWC) with two memories or preset switchable
Black Balance :	Automatic with pulse canceller
Centering for Registration :	Automatic
Feedback (Automatic) Beam Control :	2F-stop (4 times)
Encoder :	Y.U.V.
Colour Bar :	Built-in EBU colour bar generator
Colour Conversion Filters :	3200°K, 5600°K with 12.5% ND, 5600°K, close
Maximum Cable Length :	VTR Cable : 30m (Power is not supplied through cable.) 10m (Power is supplied through cable.) 14-pin Studio Cable : 100m with cable compensator
Switches :	Power, Standby/Operate Selection, Colour Bar/Camera Selection, High Gain Selection, White Balance Selection, AWC Selection, Auto White/Auto Black Set, Auto Centering Set, Level Indicator ON/OFF, Fade, Fade Colour Selection, VTR Start/Stop, Tally ON/OFF, Rec Review, CHECK, VTR Selection, Negative/Positive Selection, VTR Compatibility, Audio Level Selection
Controls :	Total Pedestal
Lens Supplied :	10:1 auto iris power servo control zoom lens 8mm - 80mm, F1.4, Micro function
Lens Iris :	Automatic or manual switchable
Lens Mount :	Bayonet mount for 1/2" pick-up tube
Lens Filter Size :	62mm P=0.75

® : Registered Trademark

Viewfinder :	1.5" (1-3/8" actual image size) electronic viewfinder with character display/CHECK function, zebra level indicator	
Power Source :	12V DC five (5) ways such as; (1) Battery pack (2) AC adaptor (3) External DC through 4-pin external DC connector (4) VTR (external AC adaptor) (5) Remote control unit through RCU/gen-lock adaptor	
Battery Pack Operating Time :	Approximately 1 hour with WV-PS60E Approximately 2 hours with WV-PS33E	
Power Consumption :	Camera Head :	9.6 watts (12V DC, 0.8A)
	ENG Configuration :	12.6 watts (12V DC, 1.05A)
	Studio Configuration :	19.8 watts (12V DC, 1.65A)
Ambient Operating Temperature :	−10°C - +45°C	
Ambient Operating Humidity :	30% - 90%	
Dimensions :	Camera Head Only :	150(W) x 261(H) x 362(D) mm
	ENG Configuration : (with WV-PS33E)	233(W) x 261(H) x 488(D) mm
	Studio Configuration :	180(W) x 464(H) x 450(D) mm
Weight :	Camera Head Only :	2.7 kg
	ENG Configuration :	6.3 kg
	Studio Configuration :	8.1 kg

Weights and dimensions shown are approximate.
Specifications are subject to change without notice.

COMPOSITION

o ENG Colour Camera WV-V3E

- o Camera Head WV-V3HE 1 set
- o 1.5" Electronic Viewfinder WV-VF34E 1 set
- o 10:1 Auto Iris Power Servo Control Zoom Lens WV-LZ33/10E 1 set
- o Unidirectional Electret Condenser Microphone WV-MC34E 1 set
- o Carrying Case WV-CC35E 1 pc
- o Registration and White Balance Chart 1 pc
- o Colour Sheet 1 pc

o Colour Camera Head WV-V3HE

- o Camera Head WV-V3HE 1 set
- o Registration and White Balance Chart 1 pc
- o Colour Sheet 1 pc

o Main Optional Accessories

o RCU/Gen-lock Adaptor WV-AD33E
- o RCU/Gen-lock Adaptor 1 set

o Remote Control Unit (RCU) WV-RC33
- o Remote Control Unit (RCU) 1 set
- o 4-pin connector for Tally/Intercom 1 pc

o 5" Electronic Viewfinder WV-VF65E (Use for Studio Version)
- o 5" Electronic Viewfinder 1 set
- o Mounting Angle 1 set
- o Mounting Base 1 set
- o Tally Card 1 set

o 1.5" Electronic Viewfinder WV-VF34E
- o 1.5" Electronic Viewfinder 1 set

o 10:1 Servo Control Power Zoom Lens WV-LZ33/10E
- o 10:1 Servo Control Power Zoom Lens 1 pc

o 10:1 Servo Control Power Zoom Lens WV-LZ32/10
- o 10:1 Servo Control Power Zoom Lens 1 pc

o Lens Control Kit WV-LK32 for WV-LZ32/10
- o Zoom Remote Controller 1 pc
- o Focus Controller with Gear Box 1 pc

o Unidirectional Electret Condenser Microphone WV-MC34E
- o Unidirectional Electret Condenser Microphone 1 pc

o Character Generator WV-KB12E
- o Character Generator 1 pc

o AC Adaptor/Charger WV-PS31 for WV-PS60E and WV-PS33E
- o AC Adaptor/Charger 1 pc

o Battery Pack WV-PS60E
- o Battery Pack (1.65Ah) 1 pc

o Battery Pack WV-PS33E
- o Battery Pack (3.5Ah) 1 pc

o Charger DE-1232E for WV-PS60E
- o Charger 1 pc

o Charger WV-BC30 for WV-PS33E
- o Charger 1 pc

o Other Optional Accessories

- o VTR Cable : WV-CA14/10 (14P-10P) 3 m
  WV-CA14/14 (14P-14P) 3 m
- o 10-Pin VTR Extension Cable : 10H-30AS 10 m
  10H-50AS 15 m
- o 14-Pin VTR Extension Cable : 14H-30 10 m
- o Studio Cable : 14C-30 10 m
- o Studio Extension Cable : 14C-100 30 m
- o Lens Mount Adaptor for 2/3'' Lens : WV-AD34
- o Tripod Mounting Adaptor : WV-Q36E
- o Chest Pad : WV-Q30E
- o Film/Slide Adaptor : WV-AD15BE
- o Carrying Case : WV-CC35E

DEUTSCHE AUSGABE
(GERMAN VERSION)

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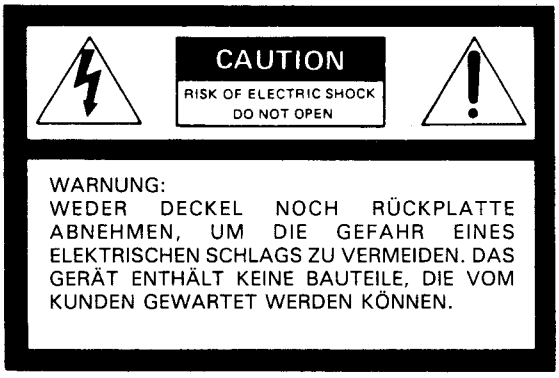
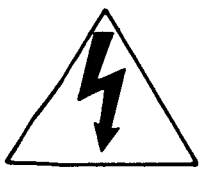

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
WARNUNG:
WEDER DECKEL NOCH RÜCKPLATTE ABNEHMEN, UM DIE GEFAHR EINES ELEKTRISCHEN SCHLAGS ZU VERMEIDEN. DAS GERÄT ENTHÄLT KEINE BAUTEILE, DIE VOM KUNDEN GEWARTET WERDEN KÖNNEN.



Das Blitzzeichen mit Pfeil im gleichseitigen Dreieck soll den Benutzer auf das Vorhandensein von nichtisolierter "gefährlicher Spannung" innerhalb des Gehäuses hinweisen, die so groß sein kann, daß sie Gefahr eines elektrischen Schocks bedeutet.

Das Ausrufezeichen im gleichseitigen Dreieck soll den Benutzer auf wichtige Bedienungs und Wartungsanweisungen in den Unterlagen hinweisen, die dem Gerät beiliegen.

Die Fabriknummer dieses Gerätes ist auf dessen Rückseite angegeben.
Sie sollten die Fabriknummer dieses Gerätes in den dafür vorgesehenen Raum eintragen und diese Anleitung als kaufsunterlage aufbewahren, um im Falle eines Diebstahls die Identifizierung zu erleichtern.

Modellnummer WV-V3E

Fabriknummer _____

WARNUNG: UM DIE GEFAHR VON BRAND ODER STROMSCHLAG ZU VERHÜTEN, DIESES GERÄT WEDER REGEN NOCH FEUCHTIGKEIT AUSSETZEN.